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SOME FEATURES OF THE THEORY AND PRACTICE OF MEDICINE DURING THE SEVENTEENTH CENTURY

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It must not be forgotten that in medicine as in all progressive, and especially in all intellectually progressive, pursuits any distinct period of time is the offspring of the previous and the parent of the succeeding period. Ideas have come over into it from its predecessors and have been transmitted with a variable increment of development to its successors. In this way the seventeenth century is the child of the sixteenth and the parent of the eighteenth century.

In searching for a vital point about which the achievements of this period may group themselves; in seeking the one great fact that distinguishes the seventeenth century from those that preceded it and those that followed it, there can be little hesitation in acknowledging the theory of the circulation of the blood to be the most important contribution to medical science during this period.

Prior to the discovery of Harvey, there had been little advance on the view taken by Praxagoras of Cos in the third century B. C. He is believed to have discovered a distinction between the arteries and the veins, according to which the veins carried blood, while the arteries distributed the vital spirits through the body. The greater thickness of the arterial walls was rendered necessary by the volatile character of their contents. The vital spirits were not fluid nor were they visible. They did not bubble in water as air would do. According to this theory, the blood that passed from the cut end of an artery when a limb was severed had suddenly been absorbed from the adjacent injured parts, the vital spirits forcing this blood violently through the severed artery.

Galen, four centuries after Praxagoras, in trying to explain the entrance of the vital spirits into the arteries, became convinced that it was the air that entered the left ventricle from the lungs. I shall have occasion further on to explain his teaching in detail.

It would seem as if the discovery of the valves in the veins should have opened up the way so plainly that the remaining step might follow immediately as a consequence; but it is easy to be wise after the fact. Harvey was long perplexed. "I found the subject so full of difficulties," he says in the "Exercitatio," "that I was ready to believe with Fracastorius (*motum cordis soli Deo cognitum fuisse*), that the action of the heart could be comprehended by God alone." He pursued the matter for years before the whole truth was opened to him. At length, however, he was able to give a full account of his great discovery in his work entitled "Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus," but there was no bookseller in London who would publish it. So he went over with his manuscript to Frankfort, where in 1628 it was finally printed and issued.

EARLY SEVENTEENTH-CENTURY SCIENCE AND MEDICAL THEORY

It was a strange world on which burst this sudden gleam of unaccustomed light. The belief in the transmutation of metals, the search for the elixir of life, judicial astrology, magic and witchcraft lay like a fivefold incubus on the minds of men. Let us take a passing glance at the attainments of the scientific mind in the beginning of the seventeenth century.

The belief in the transmutability of the baser metals into gold was as firm in the seventeenth century as in the twelfth. It was not perhaps as prevalent, but it was as sincere, and as eagerly prosecuted. It was stimulated, moreover, by plausible successes in the past. Raymond Lully was said to have changed fifty thousand pounds of some other metal into gold for Edward I of England, and many instances of similar success still held out vast promises of wealth and the power that comes from wealth to the eager hopes of the contemporaries of Milton and Sir Thomas Browne. The word "element" was current at the time in a sense so near to that which it now bears as to obscure the essential difference between the two actual meanings. Everything was thought to consist of one or more of the four elements then recognized—earth, water, fire and air—but these so-called elements themselves were not thought of as simple homogeneous indivisible bodies which is our present conception of an element. So the metals were regarded as compounds, and mercury and sulphur were thought to be their constituents. The only necessity, then, for the production of gold was a rule that would give the requisite directions as to the amount of the mercury and of the sulphur required, the degree of purity that was requisite in each, and the temperature to which the mixture was to be exposed, as well as the period of exposure. It was stated[1] as an ascertained and familiar fact that gold was composed of a most pure red sulphur and of the purest quicksilver.

> This metal is only perfect; all other is corruptible. It is concocted with sufficient heat and mixture of sulphur, whereas all other metals, either are not so well concocted, or else they have not the due quantity of brimstone; and because Nature in all her works seeketh the best end, she intendeth of all metals to make gold; but being hindered either for want of good mixture or good concoction, she bringeth forth other metals. Silver is the most pure metal next unto gold. It hath an indifferent good concoction, but it wanteth sufficient

1. Swan, Charles: Speculum Mundi.

heat in the mixture and therefore it looketh pale. It is a metal composed of pure white mercury and of clear white brimstone or sulphur.

This book was published in the year 1635, the year before Harvard College was founded. Sir Thomas Browne was then 30 years old; Milton had already achieved fame as a lyric poet, and Charles I had occupied the throne ten years. As an indication of the tenacity of this belief, I may add that about the beginning of the nineteenth century, Dr. Girianger of Göttingen made the confident prediction that before the nineteenth century had closed "the transmutation of metals will be generally known and practiced. Every chemist will be able to make gold."

If the transmutation of the metals was an appeal to men's thirst for power through the acquisition of wealth, judicial astrology was an attempt to gratify their desire to know what the future would bring to them as individuals. It is believed that alchemy gave birth to chemistry, and astrology to astronomy; but this is only partly true, for in each the method has been altered, the purpose has changed and the result altogether differs. But in the seventeenth century everybody believed in astrology. It was recognized by Parliament and accepted by Oxford and Cambridge. The author of the "Anatomy of Melancholy," Robert Burton, an English clergyman and a resident fellow at Cambridge, cast his own horoscope, and his life ended at the moment he had predicted.

Bacon, in his "Essay on Prophecies," says:

> When I was in France I heard from one Dr. Pena that the queen-mother, who was given to curious arts, caused the king her husband's nativity to be calculated under a false name; and the astrologer gave a judgment that he should be killed in a duel; at which the queen laughed, knowing her husband to be above challenges and duels.

But he was slain in a tournament, running against a knight named Montgomery, whose lance was split, and a splinter ran in at the king's beaver and killed him. Bacon died in 1626, two years before Harvey's book appeared.

In the year 1647 the astrologer William Lilly was consulted by King Charles I as to some expedient that would ensure the royal safety. The king's horoscope was cast and a way pointed out by which danger might be averted; but among the crowd of royal counselors, he neglected to follow the advice of the astrologer, and lost his kingdom and his life. In 1651 Lilly published a book called "Monarchy or No Monarchy," containing two hieroglyphic figures, copies of which are in my possession, which seem to foretell the plague of 1665 and the great fire that destroyed the city of London in 1666, fifteen years after the prophecy was published. He also predicted the exact duration of the interregnum and foretold the date of the Restoration.

In 1665 Lilly settled at Horsham and in 1670 he was licensed to practice medicine. Lilly's "Grammar of Astrology" was so much in vogue at Cambridge that he dedicated a second edition to that university. John Kepler, who died in 1630, and who discovered that the planetary orbits are elliptic and not circular, was not only an astronomer, but he also advanced astrology by developing some of its theories. He even added five aspects to the five that were in use before his time. There was, to be sure, a strain of mysticism in Kepler's nature which brought him into sympathy with occult forces.

As the production of gold promised power, and as astrology foretold the future, so the elixir of life held out a certain hope of the renewal of youth. The quest of the elixir was becoming less general and less confident of success, but it had not entirely died out at the middle of the following century, for Casanova duped Mme. D'Urfey into a belief in his ability to rejuvenate her, and he tells the story himself. Sir Thomas Browne, a physician of well-merited fame, acknowledged that the desire for length of days is not an unlawful one, but he perceived the fallacy of the attempt to procure it. He said:

> Were there any hopes to outlive vice, or a point to be superannuated from sin, it were worthy our knees to implore the days of Methuselah. But age doth not rectify but incurvate our natures, turning bad dispositions into worser habits and, like diseases, brings on incurable vices; for every day as we grow weaker in age, we grow stronger in sin, and the number of our days doth but make our sins innumerable.[2]

On March 14, 1618, Margaret and Phillis Flower were executed for the crime of bewitching Henry, the eldest son of the Earl of Rutland, and causing his death, and "for preventing by diabolical arts the said earl and his countess from having any more children." They were tried before Sir Henry Hobart, the Chief Justice of the Common Pleas, and condemned to death. It was proved that to destroy the son, they had taken a glove belonging to him and had buried it in the ground; and that "as that glove did rot and waste, so did the liver of the said Henry rot and waste." They were burned at the stake.

The witch statutes of the English penal code were enacted in the thirty-third year of Henry VIII, in 1542, and were not repealed until 1736. During the whole of the seventeenth century, then, they were enforced by the authority of the Crown, of Parliament and of the King's Bench. In that century, too, every one believed in witchcraft. Sir Thomas Browne concurred without hesitation in the justice and propriety of the laws punishing witchcraft with death. Perhaps no abler judge has ever sat on the bench than Sir Matthew Hale, the famous chief justice during the reign of Charles II. His vigorous intelligence, his rectitude of judgment, his gentle disposition and his clear mind combined with his remarkable learning to make him a great judge. At Bury St. Edmunds, at the spring assizes, two widows named Rose Cullender and Amy Duny were tried as witches in his court. They were accused of having bewitched several children, among whom were Elizabeth and Deborah, aged 11 and 9 years, children of a merchant named Samuel Pacy. The father testified that his younger daughter, being lame and unable to use her legs, had been carried out to a bank overlooking the sea, and while she sat there, Amy Duny, who had the repute of being a witch, came to the house for food and was refused. She went away grumbling and at the moment when she passed by the bank where Deborah Pacy was sitting, the child was seized with a violent fit. The child's father at once lodged a complaint before the local magistrate, and Amy Duny was ordered to be set in the stocks. While she was there two women asked her what she had done to Deborah Pacy. She replied:

"Mr. Pacy keeps a great stir about his child, but let him wait until he has done as much by his children as I have done by mine." Being asked what she meant, she said that "she had been fain to open her child's mouth with a tap to give it victuals." This remark was

2. This passage may be found in the Religio Medici, which was published in 1642.

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passed from mouth to mouth, and a few days later the elder daughter of Mr. Pacy was also taken with a fit and could not be made to open her mouth until a tap had been forced into it. The fits continued with the two children, who would say, while in convulsions, "There comes Amy Duny," or "There is Rose Cullender," and when the fits were over they would say that they had seen the two witches shaking their fists and threatening them. When any one uttered the name of Jesus in their presence they would fall into renewed convulsions. This name they themselves refused to pronounce and when asked for the reason they replied, "Amy Duny says I must not say that name."

Sir Thomas Browne was present at this trial. His book on "Inquiries into Modern Errors" had been published eighteen years before. He "was clearly of the opinion that the children were bewitched," and that these fits were "heightened to a great excess by the subtlety of the devil, cooperating with the malice of those witches at whose instance he doth these villanies." The accused women were confronted with the children over whom they seemed to possess such a diabolic influence, and the children screamed at their touch. Sir Matthew Hale then caused the children to be blindfolded, but in this condition they screamed aloud when any one touched them, without being able to distinguish the touch of their tormentors. This somewhat perplexed the judge, until it was suggested that they "might be deceived by a suspicion that the witch touched them when she did not"; which might indeed prove that the children's terrors were sincere, but should also have instructed them that this whole series of phenomena was the result of an abnormal process in the minds of the children. The women were condemned as witches on this evidence, however, and were burned to death without making any confession, March 17, 1664.

"Now the inference to be drawn from this trial," says the writer from whom I have taken the details of this case, "is not by any means that Hale was a credulous enthusiast. The whole history of his life disproves it. But the belief in witchcraft was in the very atmosphere which Hale breathed." Witchcraft was a thing taken for granted; it was a postulate of the English mind in the seventeenth century.

It was during the reign of James I that Agnes Sampson was accused of being one of two hundred witches who sailed in sieves from Leith to North Berwick to a devil's sabbath that was held there. The king himself examined her while she was being tortured, and satisfied himself of her guilt.

In Mackay's "Memoirs of Extraordinary Popular Delusions," quoted in Mallet's "Northern Antiquities," the estimate is made that in England during the seventeenth century no less than forty thousand persons were condemned and burned at the stake for the imaginary crime of witchcraft.

During this period the censorship of books was strictly enforced, and the reason that Harvey's book could not be published in England throws a significant light on the period in question. The fact is that a London publisher would have risked his life in printing it, for the press censorship was at that time firmly established in England, and was vigorously flourishing its weapons in the cause of ignorance, prejudice and bigotry.

The "Index Expurgatorius" and the "Index Librorum Prohibitorum" were joined together under the control of the Congregation of the Index, and formed one of the most effective weapons with which the Roman Church armed itself to oppose the progress of the Reformation.

In 1539, the emperor, Charles V, obtained a papal bull authorizing him to procure from the University of Louvain in Flanders, where the Lutheran controversy would naturally be better understood than in Spain, a list of books dangerous to be introduced into his dominions. It was printed in 1546, and was confirmed and promulgated anew in 1550. In 1558 Philip II ordained the punishment of death against any person who should sell, buy or own any book so prohibited. In 1564 Pope Pius IV issued the first list of prohibited books that was authorized by the Council of Trent, and handed over to the Inquisition the enforcement of his decree. The Index became so powerful an instrument in the suppression of heresy that it was adopted by the reformers themselves. Servetus was burned at the stake in Geneva for writing his "Christianismi Restitutio," the very work in which he recorded his observations on the circulation of the blood. In 1564 Queen Elizabeth ordered an examination of the cargoes of all vessels entering the Thames, in order that any heretical book might be seized and destroyed. She also decreed that any person should be deemed guilty of high treason and liable to a sentence of death, if found possessed of any book in which the doctrine of papal supremacy was taught. Under Charles I, in 1637, the Star Chamber published an act for the regulation of literature in which the penalty of selling any books opposed to the authority of the Church of England was decreed to be a fine, imprisonment and public whipping. The next year, in 1638, a clergyman named Leighton, who had published a book declaring the institution of bishops to be antichristian, was sentenced by the Star Chamber to a fine of $50,000, to degradation from the ministry, to be publicly whipped, to stand in the pillory, to have one ear cut off and one of his nostrils slit and to be branded on the cheek. That was ten years after Harvey's book was published.

It was six years later, in 1644, that Milton addressed both houses of Parliament on the subject of the "Freedom of the Press," but his splendid persuasion "was thrown away on the dull ears of his Puritan associates." The Star Chamber had already, before the death of the Earl of Strafford (in 1641) been abolished, but it was not until after many years that the censorship of the press was discontinued. Indeed, the fact is recorded that in 1686 a printer named Trogan, who had in some way come under the peril of the law, was executed, and that in 1698 a young Scotchman named Aikenhead was hanged because he had referred to Christianity as a delusion. George Haven Putnam, in his work entitled "The Censorship of the Church of Rome," says that the censorial laws remained on the statute-book until 1695. Indeed, while the censorship of the press became less generally active and less customarily enforced, it was not until 1775 that the last book was ordered by the Parliament to be burnt. The title of this work, on which England exercised its belated resentment, is not without interest to us. It was "The Present Crisis in Regard to America Considered." This was the year in which Dr. Johnson's tract entitled "Taxation No Tyranny" appeared. All this is perhaps more nearly related to the history of literature than to that of medicine, but it is not quite irrelevant, if it be true that the London publishers were deterred from printing Dr. Harvey's essay by the fear of being subjected to the rigorous reprisals of the government for bringing out a work that might receive official censure. The publishers of such a work could expect nothing short of ruin.

That such might easily have resulted was proved by the keen opposition that Harvey's discovery encountered throughout the whole of Christendom. The laws against unlicensed printing were at this time enforced in all their rigor; and no adequate argument had yet, in 1628, exposed their iniquity. Moreover, while in England there was less virulent antagonism to Harvey's theory than on the Continent, yet this was so essentially revolutionary that the authority of the Star Chamber must have been invoked for its suppression and for the punishment of the printers, if these had been within the jurisdiction of the English courts of law.

In the seventeenth century the works on natural history contained descriptions of the unicorn, the dragon, the basilisk and other fabulous monsters, which had constituted the folk-fauna of medieval romance. Ambrose Paré did not doubt the existence of the basilisk. He even gives a drawing of the monster with his description of it. These works stated seriously that at the approach of winter the humming-birds clung to the branches of the trees by the bill and there died; that the sun and the spring rains revived them and they detached themselves and flew "about their business." The swallows spent the winter in the mud at the bottom of rivers and lakes, whence they were sometimes dragged to the surface in fishermen's nets. In the year 1663 the Thames was frozen over, and booths were erected and games played on the ice. Pepys records that large holes were dug and nets of great length spread under the ice, wherein at a draught from 130 to 170 barrels of fish were taken. "Swallows are often brought up in the nets out of the mudd from under water, hanging together to some twigg or other, dead in ropes, and brought to the fire will come to life."

Burton, writing in 1625, speculated whether the peak of Teneriffe was 70 miles high or only 50. Its actual height is 12,192 feet. Vicente Espinel,[3] who died in 1634, believed that the water in Spain was lighter and more easily digested than that in Italy, "because the latter contained more moisture." So in "Purchas His Pilgrimes," published in 1625, we read, "Some of our merchants have weighed the water at Aleppo and ours in England, when they have come home, and do find their water lighter than ours by 4 ounces in the pound; and the lighter the water is, the more pleasant it is to drink, and goeth down more delectably as if it were milk rather than water."

They declared that since the heat of the sun in England could draw the water out of a saucer, doubtless in torrid countries its more vehement heat could also draw up wheat and other grains, and even draw the milk out of a cow; that sorcerers could sell winds to sailors by the help and favor of the devil, who is called in scripture the Prince of the Air (Ephes., ii, 2), and that rock crystal was nothing but snow that had been long frozen. They argued that the land floated on the surface of the sea like an island; and that there was more land than sea they proved from the passage in the book of Esdras, in which it is said that God gathered the waters into the seventh part of the earth and dried up the other six parts. They similarly believed that only the superficies of the earth was land, and that the waters bore up the earth, for the reason that the psalmist says (Ps. xxiv, 2), "He hath founded it upon the seas and established it upon the floods." Thus rivers have their origin from the sea, "which is the fountain-head from which all fountains have their springs."[1] The argument was final that drew its proof from the Scriptures.

3. In his "Marcos de Obregon."

It is almost as difficult to realize what was the condition of medicine without chemistry and without physiology as it would be to realize what our civilization would be without Christianity; and yet until the seventeenth century, the few and uncertain steps that these sciences had made is a matter of keen surprise. In chemistry they had learned to obtain by distillation alcohol from wine, acetic acid from vinegar, sulphuric acid from alum, and nitric acid from potassium nitrate (saltpeter) and ferrous sulphate (green vitriol). They had discovered how to convert metals into their oxids by heat and how to purify sulphur. They were acquainted with silver nitrate and mercuric chlorid (corrosive sublimate).

There seem to have been two different kinds of elements recognized, one of a physical and physiologic and the other of a chemical character, if these terms may thus prematurely be employed. The physiologic elements were earth, air, fire and water, of which in varying proportions all bodies were composed. These were modified by the four temperaments, hot, cold, moist and dry. There is something physiologic about them, since they altered and in turn were altered by the changing conditions of the body, and their fluctuations had a varying effect on the vital processes. The chemical elements were sulphur and mercury, regarded as simple substances, to which salt was afterward added as a third element. It has been affirmed that these substances were not at all what we have in mind to-day when we speak of them; that sulphur was that property of matter that was destroyed in combustion, that mercury was the property that was volatilized and could be recovered, and that salt was the ash or residue; but there can be no doubt that when the alchemists of the seventeenth century experimented with sulphur and mercury, they did not expect that the result would be a new grouping of attributes or a complication of symbols, but a real and tangible compound of sulphur and mercury, to wit, gold.

The comparative importance of the four physiologic elements was a fertile field for philosophic and polemic discussion throughout Christendom for many centuries. To narrate it would be to narrate the search for the chimera. In the early years of the seventeenth century, however, Van Helmont determined to submit the question to an exact test. He planted a willow weighing 5 pounds in a tub of earth, and for five years added nothing but water to the tub. At the end of five years the willow weighed 169 pounds and the earth in the tub had lost 2 ounces. He concluded therefore that at least 164 pounds of the tree must be water. As a result of his experiment, he announced his belief that there were only two elements, air and water. His test was a good one and showed the scientific spirit that was abroad. Of course he could not know anything of carbon dioxid and of chlorophyl. He died in 1644.

There were thought to be three spirits which inhabit the body, the natural spirit whose seat was the liver, the vital spirit whose home was the left ventricle and the animal spirit which dwelt in the brain. The natural spirit pervaded the venous blood, the vital spirit was carried by the arteries, and the animal spirit coursed through the nerves, which were tubular in life though closed after death.

The liver was considered to be the seat of anger, the spleen that of envy, and the heart that of love and courage. The four humors which Hippocrates had discovered and named still ruled the body. These humors were blood, phlegm, black bile and yellow bile. The spleen was the seat of the black bile and melancholy

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was a disease of the spleen; the liver was the seat of the yellow bile. The nasal mucus was still regarded as the condensation in the brain of the vapors which mounted from the body. Digestion was still thought to be produced by the innate heat of the stomach. It was a kind of cooking, and was in fact called coction.

As for the physiology of the brain, it was comprised in a few words: "The three principal faculties of the mind, the understanding, the imagination and the memory, reside in the different ventricles of the brain, the imagination having its seat in the forepart, the memory in the hinderpart and the judgment or understanding in the middle." This is of course a philosophic and not a scientific conjecture.

The distinction between philosophic medicine as inculcated by the followers of Galen, and scientific medicine as introduced by the use of experiment and observation, finds a curious comment in a story that is told of a question propounded by Charles II for the consideration of his courtiers, "whether a vessel of water would gain in weight by putting a fish into it." Long and hot the discussion lasted, and the conclusion was finally reached that a live fish would not increase the weight of the vessel, but that a dead fish would. This was philosophy. Long afterward it occurred to some skeptic to test the conclusion by actually weighing the vessel under these different conditions. This was science.

Dr. Willis, as late as 1659, maintained that all natural changes in organic bodies depended on fermentation in their constituent principles, which were spirit, sulphur, salt, water and earth. Sir George Ent, the president of the Royal College of Physicians, taught that the purpose of the blood was not to nourish the body, but to keep it warm, and that "the urine is not conveyed to the kidneys by the arteries but by the nerves."

Indeed, it is not an easy task to discover among the various physiologic beliefs that were current before Harvey, any that still hold a place in modern science. The microscope, in its early form and considered mainly as an interesting toy, dates from the beginning of the seventeenth century. It consisted merely of a double convex lens in a frame, with an eyepiece holding a single convex lens. With this simple apparatus the circulation in the capillaries was observed, the red and the white corpuscles of the blood were discovered, and the spermatozoa and the ovum were detected. The discovery[4] of the spermatozoa in 1677 was the occasion of the passage of a law which held its place among English statutes for many years. As soon as they were discovered they were regarded as the true germ or microcosm of man, while the ovum of the female was considered as consisting merely of food for the sustenance and growth of the new being. The female was looked on then merely as affording a home for the growth of the fetus, and Parliament, accepting this hypothesis, decided that the mother, having contributed nothing to its being, was not of kin to the child.[5]

Bacon's treatise on the "Advancement of Learning" appeared in 1605. In this essay he not only summarizes the spirit of the intellectual development of the past, but also ventures to indicate the present defects and to point out the path of progress to the future. His scope is so wide as to leave no intellectual interest unconsidered and no intellectual activity unnoted, and among them all, he pays due regard to the theory of medicine. Among other defects he notes the lack of careful intimate study of the body. He says:

> As the sense afar off is full of mistaking, but is exact at hand, so it is of the understanding; the remedy whereof is not to quicken or strengthen the organ, but to go nearer to the object. Medicine is a science which hath been more professed than labored, and yet more labored than advanced; the labor having been in my judgment rather in circle than in progression. For I find much iteration, but small addition. . . . The deficiencies which I think good to note . . . I will enumerate.
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> The first is the discontinuance of the ancient and serious diligence of Hippocrates, which used to set down a narrative of the special cases of his patients, and how they proceeded and how they were judged by recovery or death. This continuance of medical history I find deficient, which I understand to be neither so infinite as to extend to every common case, nor so reserved as to admit none but wonders. For many things are new in the manner which are not new in the kind; and if men will intend to observe, they shall find much worthy to observe.
>
> As for the footsteps of disease, they ought to have been exactly observed by a multitude of anatomies, and the contributions of men's several experiences, and carefully set down, both historically, according to the appearances, and artificially, with a reference to the diseases and symptoms which resulted from them, in case where the anatomy is of a defunct patient; whereas now, on opening of bodies, they are passed over slightly and in silence.

In these few words is a recognition of the benefit to be derived from a careful and painstaking record of cases and from post-mortem examination, which the physicians of this generation now readily acknowledge, but which was almost entirely neglected during the earlier part of the century which at present occupies us. We certainly know to-day that only thus do we reap the full advantage of our own experience, for memory is treacherous and impressions fleeting. Before the seventeenth century closed, this reproach was to be removed from the record of medicine.

Vivisection of animals could scarcely seem to promise much valuable instruction while the theories of the humors underlay, or rather overwhelmed, all the conceptions of physiology; but Bacon's insight into the needs of medicine in his time is nowhere more keenly indicated than in his recognition of the value of vivisection; for Bacon himself accepted the so-called humoral pathology that was destined to dominate medicine until its reluctant sway was broken by Pasteur and Virchow. Here are Bacon's words:

> In the inquiry which is made by anatomy, I find much deficience; for they inquire of the parts and their substances, figures and collocations; but they inquire not of the diversities of the parts, the secrecies of the passages and the seats or nestlings of the humors, nor much of the footsteps and impressions of diseases; the reason of which omission I suppose to be because the first inquiry may be satisfied in the view of one or a few anatomies; but the latter, being comparative and casual, must arise from the view of many. And as to the diversity of parts, there is no doubt but the framing of the inward parts is as full of difference as the outward, and in that is the cause continent of many diseases, which not being observed, physicians quarrel many times with the humors, which are not in fault, the fault being in the very frame and mechanic of the part, which cannot be removed by medicine alterative, but must be palliated by diets and medicines familiar. And for the passages and pores, it is true what was anciently noted, that the more subtile of them appear not in anatomies, because they are shut and latent in dead bodies, though they be open and manifest in life; which being suffered, though the inhumanity of *anatomia vivorum* was by Celsus justly approved; yet in regard of the great use of this obser-

4. By Von Hammen, of Leyden.
5. "Mater non numeratur inter consanguineos." Swinburn, "On Testaments," Part VII, Section 8.

vation, the inquiry needed not by him so slightly to have been relinquished altogether, or referred to the casual practice of surgery, but might have been well diverted on dissection of beasts alive, which, notwithstanding the dissimilitude of their parts, may sufficiently satisfy the inquiry.

It is true that Bacon was not himself a physician, in the sense of diagnosing disease and prescribing remedies, but perhaps no one ever predicted so well as he the exact path of development that the profession of medicine must take to regain its true position in the intellectual world. Pliny, likewise, was not a physician, though his "Therapeutics" was a wonderful maze of half-knowledge miraculously misapplied, and yet his "Natural History," such as it was, maintained its authority as a text-book for sixteen centuries; so, too, Celsus was not a physician, yet between Asclepiades and Galen, no one did so much as he to improve the science of medicine. And we must not forget that for many centuries medicine was considered to be merely a department of philosophy; and while philosophy seems to be able to thrive without medicine, it will some day come to be realized that medicine cannot fulfil its high mission without the assistance that philosophy alone can furnish. Bacon's suggestion of animal experimentation was timely and fruitful. It had been used irregularly before his time, but it is only within recent years that it has entirely vindicated its right to a high place in the researches of medicine.

(To be continued)

WHEN IS OPERATIVE TREATMENT INDICATED IN CHRONIC DYSPEPSIA?

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The stomach has been unjustly accused of more pathologic sins, and has received more unnecessary treatment than any other organ of equal size and importance. Nearly all of these transgressions are included under the general term "dyspepsia," about which much has been written and but little known until recently, when the pathology of the organs in the abdominal cavity has been correctly studied by direct inspection in the work of the abdominal surgeon.

We find in our best text-books on medicine beautifully written chapters on the classification, etiology, symptomatology, diagnosis and treatment of chronic dyspepsia, some of which have been copied and handed down for generations. These descriptions are full of errors as we now know from the study of the pathology of the living. The diagnosis was based mainly on theory and fancy, and was seldom correct; hence the treatment was empiric, and in the newer light of to-day is seen to have been often harmful. Unfortunately some of our best men who confine their work to the medical treatment of diseases of the stomach and intestines have not availed themselves of all the wisdom to be gained in the surgical arena by direct inspection of the diseased organs in the abdominal and pelvic cavities. The text-books on medicine tell us about acid gastritis, acid dyspepsia, hyperchlorhydria, flatulent dyspepsia and nervous dyspepsia as entities, when in truth most of these conditions are caused by gall-stones, appendicitis, peritoneal adhesions, pelvic infection, ileocolitis, intestinal tumors, etc., and the stomach is trying to tell us about a pathologic condition somewhere else that is giving it trouble.

The term "functional dyspepsia" should be eliminated from medical nomenclature, for if this disease ever exists it is so infrequent as to be practically negligible, and hyperchlorhydria is only a symptom, an increase in the secretion of hydrochloric acid, usually with no structural lesion of the stomach. Like the digestive enzymes, the secretion of hydrochloric acid may be increased or diminished by a change in diet and in other ways, as shown by Starling and Pawlow.

The effort to construct a pathology on chemical analyses of the stomach secretions has been a total failure, for practically the same chemical findings may obtain in several distinctly different diseases that cause the stomach trouble. The test-meal alone is of little value as an aid to diagnosis in either ulcer or cancer, and if we delay in the latter to confirm the diagnosis by this means, the disease will then have progressed so far that surgery can offer no relief. The presence of lactic acid, food remnants, blood, low acidity, and the Boas-Oppler bacillus, and the absence of free hydrochloric acid may be found in some cases of latent calloused ulcer and reflex pylorospasm, and are in no sense pathognomonic of cancer. In cancer there may be a normal or even a high acidity, and this is especially true when the pyloric end of the stomach is not involved. In such cases cancer may stimulate the pyloric glands to a more active secretion of acid.

While I do not deny that there is value in stomach analysis, it must always be subordinate to the clinical history and the physical examination. It is only an additional aid in diagnosis. Stomach analysis in chronic gastric and duodenal ulcer is of far less value in diagnosis than is stomach motility, which can be more correctly observed and more intelligently interpreted. The *x*-ray has been of much value in this particular in showing the motility in impaired stomach drainage.

Let me make a more definite classification of the causes of chronic dyspepsia, that we may have a more intelligent conception of the treatment best adapted to the cure of the trouble in the stomach, or to the removal or modification of the condition in some other part of the body to which the stomach is trying to direct our attention in a language of its own, much of which may now be correctly interpreted:

1. In 90 per cent. of cases of chronic dyspepsia there is no pathologic lesion in the stomach, and the conditions requiring operation in the entire gastro-intestinal tract, and all structures in the abdominal and pelvic cavities do not exceed 30 per cent.

2. In about 30 per cent. the stomach trouble is caused by cardiac and kidney insufficiency, tuberculosis, arteriosclerosis, tabes dorsalis, etc.

3. Another 30 per cent. is caused by congenital or acquired defects in the viscera of the abdominal and pelvic cavities, plus gastro-intestinal neuroses—gastroptosis, enteroptosis, atonic dilatation of the stomach, etc.

Stomach complaint is the most common manifestation in neurasthenia, especially inborn neurasthenia. It has been said that the abdominal surgeon has invaded the territory of the physician and has encroached on his field, but this is not true. The same was said when the surgeon began curing appendicitis by removing the appendix, but no one will make that contention now, and those who are best able to judge know that medicine does not cure appendicitis, and that purgation in every case of acute appendicitis is positively contra-indicated. It quickly increases peristalsis of the lower ileum, appen-

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dix and cecum, fills this part of the bowel with liquid, with a great increase in the number and virulence of the bacteria, all of which is positively harmful, and is often the cause of perforation or gangrene of an appendix which might have caused no immediate harm had it been left at rest.

I do not remember to have operated for several years in a single case of perforated or gangrenous appendix until after the patient had been given a purgative. There can be no conflict between the well-trained and honest physician and surgeon, as both are striving to accomplish the same end—to cure the patient. The duties of one do not always cease where the duties of the other begin, but there is necessarily often an interlacing to give the patient the full benefit of the knowledge of both. Far better would it be for all concerned if the physician would follow his abdominal cases into the operating-room and study with the surgeon the pathology of the living. He and the surgeon might then have a more intelligent agreement about the diagnosis and treatment of the case.

It is probably true that some of the best-known men in internal medicine, men who contribute much to medical literature, have seldom or never seen an abdominal operation in a living person. This necessity for studying by direct inspection the pathologic condition in the abdominal cavity that causes the stomach to complain is no less necessary in the study of all diseases in the abdominal cavity that have no stomach manifestations. Since this has been done the traditional fads and fancies in the diagnosis of these diseases are passing away like the snow when the warm rays of the sun shine on it. Pelvic cellulitis is now suppurative salpingitis; pelvic intraligamentary hematocele is now ruptured extra-uterine pregnancy; idiopathic peritonitis in the right middle quadrant and perityphlitis are now appendicitis.

We were told that tuberculosis of the bladder was always primary and that tuberculosis of the kidney was usually an ascending infection, and secondary to the bladder involvement. We now know that practically 100 per cent. of bladder tuberculosis in women is secondary to kidney involvement; the same is true of 85 per cent. in men, the other 15 per cent. being secondary to tuberculous involvement of the epididymis, vas deferens, seminal vesicles and the prostate.

We were told that chronic ulcer in the stomach was usually multiple and ten times more frequent than chronic ulcer in the duodenum. We now know that chronic ulcer in the stomach is multiple in about 6 per cent. of cases and that we have one ulcer in the stomach to three in the duodenum.

We were told that the ingestion of food in chronic ulcer of the stomach and duodenum caused pain and symptoms in the stomach immediately or soon after eating. We now know that it seldom or never does so except in old cases in which there is obstructed stomach drainage. In stomach ulcer food relieves pain for from one-half to one and a half hours, and in duodenal ulcer it relieves pain from one to three hours. This is so conspicuously true that a patient with ulcer in the stomach or duodenum will put bread in his pocket when he leaves his home or goes to his bedroom at night, to eat when pain returns. We were told that gastric and duodenal ulcers were more frequent in women. We now know that about 75 per cent. of these ulcers are in men and about 25 per cent. in women.

We were told that in 90 per cent. of the cases gall-stones cause no symptoms, and that the gall-stones are innocent. We now know that there are symptoms in nearly every case of gall-stones and that gall-stones may at any time cause serious infections and secondary complications.

It will thus be seen that the surgeon who has built a new pathology based on direct inspection of the pathology of the living was often compelled to "tear down and reconstruct; he used the sledge-hammer and the crowbar as well as the trowel and the plumb-line." While the bladder could be directly inspected through the cystoscope and the ureters and the secretion of the kidneys by the ureteral catheter, and stone in the kidneys and bladder by the *x*-ray, no such record could be achieved by the gastroscope, and the *x*-ray had not been of much value except in inspecting stomach motility. It was therefore necessary to inspect the stomach and other abdominal viscera through an abdominal incision.

It was the gynecologist who made possible these great achievements by demonstrating in the surgery of the uterus and its adnexa that the peritoneum is tolerant to much manipulation when treated with reasonable respect, and by avoiding rough handling and the introduction of septic matter. The surgeon then began his invasions of the middle and upper regions of the abdomen, and must be given full credit for what he has done. In the investigative work of the abdominal and pelvic surgeon he has made the peritoneal cavity a research laboratory, and has given us the pathology of the living at a time when life may be saved by timely surgical intervention.

We must also give due credit to the excellence of the work done in the research laboratories in physiology, physiologic chemistry, bacteriology, etc., from the study of which so much has been learned of incalculable value to the surgeon and the physician in their treatment of all gastro-intestinal diseases, and all diseases of the intra-abdominal viscera. Cannon, Pawlow, Starling, Metchnikoff, Cushing, Herter and many other research workers in the physiology of digestion and the motility and bacteriology of the gastro-intestinal tract have given us a practical conception of much that is necessary to a correct understanding of the pathology and the treatment of the diseases of the stomach and the intestines. The names of these men will live in history when the work of the surgeon will have been forgotten.

Before post-mortem investigation the practice of medicine was empiric and the diagnosis and the treatment of all internal and hidden diseases in the abdomen was based on fads and fancy. While the study of pathology in the dead was the beginning of the scientific study of disease, it led to pessimism, for it dealt only with end-results and showed conditions that did not exist at a time when the disease could have been cured. "But few people with chronic disease die of the disease with which they suffered during life"; most die of terminal infections or secondary complications.

The cellular pathology of Virchow was another scientific advance, but as it mainly dealt with end-results it was for the time being of but little practical use in curing disease.

It may thus be easily understood that in diseases of structures in the abdominal cavity we can build up no correct pathology at a time when the patient may be cured, unless it be based on direct inspection, through an abdominal incision, of pathologic conditions in the living.

The 30 per cent. of dyspepsia caused by general diseases is never surgical, nor is the dyspepsia cured by the application of treatment direct to the stomach. The

treatment must be given to cure the disease that is causing the stomach to complain. The 30 per cent caused by neurasthenia, atonic dilatation of the stomach, gastroptosis, enteroptosis, nephroptosis and gastro-intestinal neuroses will not be cured by treatment applied to the stomach. We must treat the condition that causes the stomach symptoms. The treatment of these cases is medical except in some cases of dyspepsia caused by ptosis of the right kidney and hepatic flexure of the colon, and midline ptosis of the stomach and transverse colon when the colon has remained fixed at the hepatic and splenic flexures.

In the first, the kidney and the colon may be elevated and fixed through a posterior incision, and in the latter we may sometimes obtain good results by shortening the falciform, the gastrohepatic and the gastrocolic ligaments, one or all as may be indicated by the condition, this to be supplemented by stitching the great omentum across the anterior abdominal wall 2 inches above the umbilicus, to serve as an apron for the stomach. Coffey has done good work of this kind, as have others by similar operations; but in cases of general enteroptosis with continued dyspepsia, operative treatment has done but little good. Most of these patients have inborn neurasthenia, and to treat them successfully we must begin with their great-great-grandparents, an undertaking beyond the limit of medicine or surgery. These patients and others with inveterate stomach trouble with acquired neurasthenia, gastro-intestinal neuroses and the gastric crises of tabes dorsalis have been persistently treated by the physician and the quack, and the surgeon has left his mark on the abdomen following a laparotomy for gastrojejunostomy. They have been treated by electricity, by Christian Science and osteopathy, have had their stomachs daily lavaged, and have taken all the vile nostrums of the advertising "patent-medicine" fraud, with about the same result. They continue to complain of stomach trouble and are only too willing to try something else.

Fortunately the surgeon in his treatment of these patients in the last few years has learned much that is of value in guiding him against doing unnecessary or harmful stomach drainage operations. The impaired drainage in these cases is the result of atonic dilatation and impaired stomach motility, and not of obstruction. In such cases gastrojejunostomy does not drain, can do no good, but has done much harm. No surgeon who should be recognized as capable of treating the diseased viscera in the abdominal cavity would now try to drain the stomach in these patients. Acute ulcer of the stomach or duodenum is toxemic, caused by septic foci in other parts of the body, and is never surgical unless it be for perforation. These patients either die promptly or recover in a few weeks. Hematemesis, with no characteristic symptoms of long standing, is not surgical for it may be profuse or fatal when no ulcer can be seen, and it requires a magnifying glass to see the general erosion or fissure from which the blood is oozing. Vomiting of much blood is not an unusual symptom in cirrhosis of the liver and enlargement of the spleen, and it may be caused by acute or chronic appendicitis. That appendicitis has a causal relation to the etiology of gastric erosion or acute and chronic ulcer is evidenced by the frequent association of these conditions, and the appendicitis often appears to antedate the stomach trouble. In Hutchinson's report of twenty-four deaths caused by postoperative hematemesis, twenty-one followed operations for septic appendicitis. Every abdominal surgeon of broad experience has observed the frequent association of a chronic appendicitis with dyspepsia, and has noted the fact that in these cases, if the stomach has no organic lesion, the dyspepsia is cured when the appendix is removed.

Dyspepsia in some degree is nearly always associated with gall-stones, the removal of which cures the stomach trouble. The same is true when the dyspepsia is caused by intestinal or peritoneal adhesions or pelvic infections. When the exciting cause is removed the dyspepsia disappears. This, however, presupposes that there is no lesion in the stomach or elsewhere that may cause the dyspepsia. It is not infrequent to find in these cases an association of chronic appendicitis and gall-stones, and we may also find stomach or duodenal ulcer, to which peritoneal adhesions, pancreatitis and pelvic infection may sometimes be added. Just here lies the necessity for the surgeon to make an examination of all the structures in the abdominal and pelvic cavities through a wide incision, where there is no contra-indication. The failure to do this has often given an excuse for criticizing the surgeon because the patients were not cured; he was accused of doing unnecessary surgery, when he should have been censured for not doing enough surgery.

In my operative work in the abdomen I never fail to make the most thorough examination of all the viscera of the abdominal and pelvic cavities except in septic cases, and in cases in which the condition of the patient is such that any continuance of the operation would endanger the immediate result. Were I to report in detail the many cases of chronic dyspepsia of long standing, with no stomach or duodenal lesion, which have come under my observation and been cured by the removal of all the pathologic conditions in other abdominal structures, the report would be too long for any one to read.

There is but one treatment that can cure the inveterate dyspepsia caused by calloused gastric or duodenal ulcer, and that is surgery, and always surgery. The symptoms may subside under other treatment, by diet, rest and the observance of correct hygienic and sanitary laws, but the disease is not cured; the symptoms have disappeared to return at another time. This is conspicuously true in duodenal ulcer. Some of these patients have been cured many times, but the symptoms always return, and in the cases of permanent cure there was an error in diagnosis; the patients never had calloused ulcer. They are always made worse in cold, damp weather, and they improve or may be entirely cured of symptoms in warm, dry weather. They are made worse by worry and overwork, but if the worry is removed and the work lessened they improve. A change from a damp, cold climate to a warm, dry climate will be followed by much improvement, or even by cure of the symptoms. These seasonal changes are so manifest that patients who can afford to do so will change their residence with the change in season. The above is true in a lesser degree in chronic calloused gastric ulcer. The anamnesis in these cases, particularly in ulcer of the duodenum, is of greater value in diagnosis than are all other symptoms combined.

While the treatment of chronic gastric and duodenal ulcers is operative, we must always be able when the stomach or duodenum is exposed to demonstrate by sight or touch, of by both sight and touch, the presence of an ulcer. This can be done, for the ulcer has invaded all the layers of the wall. If no ulcer can be seen or felt, the abdomen should be closed at once, unless a pathologic condition that the stomach has been trying to tell us about can be found somewhere else.

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In all cases of duodenal ulcer and in nearly all cases of gastric ulcer a gastrojejunostomy is indicated. In duodenal ulcer the ulcer should be infolded by several linen or silk sutures introduced from side to side and deep enough to include the vessels going direct to the ulcer. Excision is seldom indicated because the patients are cured as well without it, and cancer seldom, if ever, develops in a duodenal ulcer. As nearly 75 per cent. of cancer in the stomach develops in a chronic ulcer, then in addition to the gastrojejunostomy the ulcer should usually also be excised. In many of these excised ulcers McCarty and some other pathologists have found well-developed carcinoma.

In conclusion I wish to note that 90 per cent. of ulcers in the stomach are in the lesser curvature, and that 90 per cent of ulcers in the duodenum are in the first inch of the bowel; that 25 per cent. of calloused ulcers are in the stomach and 75 per cent. in the duodenum, and that gastric ulcer is multiple in about 6 per cent.; and that 75 per cent. of gall-stones are in women and 25 per cent. in men. In every case of duodenal ulcer there is an excess of free hydrochloric acid at some more active phase of the disease, and this is practically true in stomach ulcer, but to find the excess frequent examinations must be made at different stages of the trouble. In every case of duodenal ulcer, and in all or nearly all cases of stomach ulcer, free or occult blood will be vomited, or found in the feces if the examinations are repeatedly and correctly made. Dr. Craven Moore of Manchester, one of the most painstaking pathologists in England, reports that in a long series of cases in which operation was performed for duodenal ulcer he found in every case an excess of acid, and occult blood in the feces. While ulcer in the pyloric canal of Jonnesco is relatively infrequent, I recently found in two cases in which I operated open perforation just proximal to the pyloric vein.

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RESULTS WITH TUBERCULIN (DIXON'S) IN ADVANCED CHRONIC AMBULATORY TUBERCULOSIS *

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It is unnecessary in connection with the following report to discuss even by way of introduction the broad question of the use of tuberculin in any of its many relations, as for instance its availability in dispensary practice, which is, we believe, fully established. Our purpose is to report briefly the results in a series of ambulatory cases, principally because in these cases there was a peculiarly favorable opportunity to eliminate other causes of improvement, and so to estimate the effect of the tuberculin *per se*.

All those in the series were patients at the State Tuberculosis Dispensary in Philadelphia (No. 21) and had been under observation continuously for a period of several years before being brought together in a special tuberculin class.[1] They had all had a prolonged course of treatment at the State Sanatorium at Mont Alto (there were two previously treated at White Haven), and had returned to their homes on an average of from four to six months before the injections were started, during which time they had all been members of a tuberculosis class meeting every two weeks, in which their progress was carefully followed. They were selected from a group of several hundred patients on account of their physical condition and the nature of their lesions and because the entire course of their disease was known and they were all of sufficient intelligence and persistency of purpose to have been carrying out the most systematic treatment in their homes (which offered suitable facilities for this), and had proved themselves capable by their home-record charts of giving an intelligent account of their symptoms and condition under tuberculin. The number of cases, eleven, was purposely limited in order that they could be studied in greater detail and with the greatest care.

But the cardinal reasons for their selection were that the cases all belonged to the chronic fibroid type, either moderately or far advanced, with little or no fever, and that the patients had already developed a fair resistance to the disease, yet in them there was observable a very gradual deterioration in weight and strength in spite of everything which could be done for them. This was observable by comparison of their condition at considerable intervals of time and was further indicated by the fact that they had all returned to work and been compelled by gradually failing health to give it up.

They had had the advantage of home and sanatorium treatment and a liberal diet, had lived under favorable hygienic conditions consistent with their station in life, and had been under constant supervision of physicians and nurses trained in tuberculosis work. The women were able to attend to their household duties, and the men had resumed their occupation on returning from the sanatorium, but had been compelled to abandon their work on account of physical incapacity which manifested itself sooner or later after resumption of their former occupations. They represented a class of fairly well-nourished individuals, most of them having measurably regained their average weight, and had felt themselves largely restored in health on leaving the sanatorium.

In other words, these patients under a most systematic and adequate regimen (which was in no way altered during the course of tuberculin) had remained either stationary in condition and weight for a long time, but considerably below par in general health, or in some instances they were slowly losing, each month or so showing a reduction in general efficiency and a gradual loss of weight.

It was therefore with a view of estimating the effect of the use of tuberculin on the general health or functional betterment that the injections were undertaken: first, as evidenced by increase in strength as measured by their ability to do more, that is, to return and remain at work; second, as evidenced by increased appetite and assimilation as indicated by increase in weight and the retention of this increase.

The patients kept a daily record of their temperature, which was recorded on a home chart provided for the purpose. Any untoward symptom, as increase in cough, expectoration, insomnia, nervousness, nausea, chills, fever, headache or malaise, was also noted by the patient. Their observations were made twice daily.

The injections were given as a rule once a week. The weight of the patient, the dose of the injection, the pulse, temperature and respiration were recorded immediately before the injection. Analysis of the patient's home chart as to any untoward symptoms resulting from the previous injection was during a succeeding period of

* Read before the College of Physicians of Philadelphia, Dec. 4, 1912.

1. The practical work on these cases, namely, the giving of the tuberculin injections and the keeping of most complete and laborious records, was carried out by Dr. Hartz.

five days carefully considered and then recorded on a special chart which was the permanent record of the progress of each case. These charts were kept at the dispensary. Each month the patient was reexamined, recharted and closely questioned as to his physical well-being, and the results were recorded on this permanent record in the patient's own statements. These observations were elicited without any undue suggestion of the examiner. The sputum of each patient when obtainable was examined every month.

PREPARATION OF TUBERCULIN [2]

In the *Medical News*, Oct. 19, 1889, attention was called to a morphologic condition of the tubercle bacillus which had never previously been observed. This change consisted in modifications of the organisms which suggested possible involution forms. These forms represented a difference in the degree of virulence which led to the subcutaneous injection of these somewhat devitalized organisms into tuberculous animals with a result of producing different degrees of immunity. Tubercle bacilli were cultivated in a number of tubes to a stage at which few or no ordinary rod-form bacilli could be microscopically found in the cultures, and inoculation into guinea-pigs and rabbits of these atypical and avirulent forms resulted in a short febrile stage with an enlargement of the lymphatic nodes located in the neighborhood of the point of injection. This condition, however, soon passed away and the animal recovered, and afterward exhibited a high degree of resistance against the effects of virulent tubercle bacilli. On further experimentation it was shown that by treating a mass of tubercle bacilli with ether and abstracting with a salt solution, a product was obtained that, when injected into the animal economy, changed the condition of the tissue cells and thereby prevented the growth of the tubercle bacilli. The result of the work was first published in the *Medical News* of Jan. 17, 1891, page 87. This work was continued by Dr. Samuel G. Dixon until two methods of preparation had been published from time to time, as improved technic had been adopted resulting in the method hereinafter outlined.

Tubercle Bacilli Extract.—This product is prepared from living organisms. The tubercle bacilli are grown on 4 per cent. glycerin veal broth for a period of from six to eight weeks at a temperature of 37.5 C. They are removed from the incubator and collected on hard filter paper. The filtrate of glycerin broth on which they are grown is discarded. An equal quantity, by weight, of tubercle bacilli of the bovine and human type is used. The mass of organisms is partially dried of the excess of moisture by placing between two sterile filter papers and afterward placed in a dish in the incubator for from twenty-four to forty-eight hours. The dried organisms are then washed in an excess of ether, which is allowed to act until it has removed all of the water and glycerin. The organisms are then subjected to an excess of fresh ether and washed in this for six hours to soften the wax of the bacilli. This fat separates so that it collects at the bottom of the vessel and is removed by a Pasteur pipet. After removal of the second addition of ether, the mass is allowed to dry until no ether odor is perceptible. After the mass of tubercle bacilli have been thoroughly dried, it is ground in a mortar and suspended in physiologic salt solution in the proportion of 1 part of the ground mass to 5 parts of an 8 per cent. salt solution. This suspension is carried in a shaking machine for from eight to ten hours and then allowed to stand for several days at room temperature. It is finally passed through impervious bacteria filters several times, and the filtrate is examined microscopically, bacteriologically and physiologically. Culture tests are made to determine its freedom from contaminating organisms, and guinea-pigs are inoculated to ascertain that it contains no living tubercle bacilli. One c.c. of this extract represents 0.5 gm. of the organisms, and is known as the stock solution from which serial dilutions are made. This solution is sterile, though a preservative of 0.5 per cent. of phenol (carbolic acid) is added to prevent any subsequent contamination.

2. Pennsylvania Health Bull., October, 1911.

The tubercle bacilli extract is supplied in syringes in the series of dilutions given in Table 1, so that the doses may be increased as deemed advisable.

TABLE 1.—TUBERCLE BACILLI EXTRACT

Dilution No.	Amount of Extract of Tubercle Bacilli Contained (gm.)	Dilution No.	Amount of Extract of Tubercle Bacilli Contained (gm.)
1	0.001	11	0.1
2	0.01	12	0.11
3	0.02	13	0.12
4	0.03	14	0.13
5	0.04	15	0.14
6	0.05	16	0.15
7	0.06	17	0.16
8	0.07	18	0.17
9	0.08	19	0.18
10	0.09	20	0.19

It is suggested that in ordinary cases, the injection of each dilution be repeated at least five times before changing to the next number, or next stronger dilution.

The physician should bear in mind the general condition of the patient during the administration of this treatment, and the same suggestions as are later outlined for the administration of the suspension of dead tubercle bacilli are applicable to this product. It is to be remembered, however, that the tubercle bacilli extract is tóxic and must be used with caution. Small repeated doses injected into normal guinea-pigs cause no effect on their temperature, weight or condition.

TECHNIC

The tuberculin used was the tubercle bacilli extract prepared after the method of S. G. Dixon.[2]

Each injection was in a separate aseptic syringe ready for use and put up not unlike diphtheria antitoxin. Ten different dilutions, representing different strengths of tuberculin, were used. As many injections of one number (strength) as were consistent with the progress of the patient were given, usually three, sometimes as high as six, depending on the reaction induced. Every care was taken to avoid even slight reactions, and in this event the usual course was followed of omitting the next injection and repeating the same dose.

The weakest injection represented 0.001 mg. of tuberculin, the strongest 0.09 mg. The injections were given in the interscapular tissues of the back. The part was washed with ether, and as the syringe was in an aseptic state no other preparation was necessary. At no time was there any severe local reaction or any evidence of infection noted at the site of injection.

The dose should be small at the beginning, particularly so with the first six or eight injections until tolerance is established, for if the increase be too rapid, reactions become more frequent and treatment must be discontinued until susceptibility wanes.

The time element is of great importance in the full course of treatment and should never be less than four months, and may with benefit be extended to a year or even longer. Reactions and the progress of the case under treatment must be considered in regard to length of treatment.

When the extract is given in suitable cases at regular intervals varying from periods of five to seven days and in appropriate doses, no harmful effects were noted.

Should a moderate or a severe reaction occur, instead of decreasing the dosage it is better to omit the following one or two injections until the patient's tolerance is raised, and then repeat the same dose.

SUMMARY OF CASE HISTORIES

CASE 1.—W. O., carpenter, aged 46, married, American. Diagnosis on admission, May 9, 1908, pulmonary tuberculosis, far advanced; prognosis unfavorable. Consolidation upper and middle lobes right side, with large cavity and heart displaced

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to right; consolidation left upper lobe. Active symptoms began three years previously with cough, loss of weight and strength. Average weight in health, 150 pounds. Height, 5 feet, 8 inches. Weight on admission to dispensary, 112 pounds. Weight on return from Mont Alto, Dec. 15, 1909, after three months' sojourn, 158 pounds. Patient on return began to cough and spit more and slowly lost weight and strength. He also began to have a little increase of temperature and, though up and about, was unable to work. Took the cure systematically, but did not improve. Weight dropped to 138 pounds.

Treatment and Results.—Patient was under treatment seven months, following return from Mont Alto, before tuberculin injections were begun, July 12, 1910, (weight 138 pounds) and continued for eight months, during which time he received twenty-seven injections. At the end of three months he had gained 10 pounds, and his condition had improved so much that he was permitted to return to work on half time, and two months later to his regular work, eight hours a day. At the conclusion of his course of tuberculin he showed evidence locally of good arrest. He was practically without cough or other symptoms and working steadily.

Nov. 27, 1912: Local condition very fibroid and inactive; few metallic, sticky râles; general condition splendid; patient working at his regular employment right along (hours 7 a. m. to 5:30 p. m.) and during past June, July and August from 7 a. m. to 8 p. m.). Some cough still and little expectoration on rising. Strength good. Weight 146½ pounds, 8½ pounds gain over weight at commencement of tuberculin, twenty-eight months ago.

CASE 2.—G. W., pearl-worker, aged 48, married, American. Diagnosis on admission, Sept. 18, 1909, pulmonary tuberculosis, far advanced; prognosis unfavorable. Consolidation both upper lobes; cavity on left side. Active symptoms began nine years previously with hemoptysis and loss of weight and strength. Average weight in health, 130 pounds. Height, 5 feet, 4¾ inches. Weight on admission to dispensary, 116 pounds. Weight on leaving sanatorium (White Haven), where he had spent fourteen months in 1902, 135 pounds. Patient returned to work for a short while on leaving sanatorium, but has practically done nothing for ten years. He was coughing and spitting a great deal (2 ounces) on admission, was dyspneic, weak and very thin, and was afebrile. Tubercle bacilli present. Weight, 116 pounds.

Treatment and Results.—Tuberculin was begun Oct. 2, 1909, and patient received in all thirty-five injections during a period of twelve months. Two months after first injection he had gained 6 pounds, felt much better, cough and expectoration were greatly decreased in frequency and severity, there was little sputum, and appetite and digestion were much improved. At the end of six months patient weighed 127 pounds, a gain of 11 pounds under tuberculin, and felt so much better that he decided to go to work and spent two months out of the city, during which time he worked regularly and supported himself. He returned, September 15, having gone down to 122 pounds but without the return of any serious symptoms; decided to continue his tuberculin treatment, about which he was enthusiastic. By February, 1911, at the close of tuberculin treatment, he had gained his former weight, 127½ pounds, and one year later, during which time he had been steadily at work, weighed 130 pounds.

Nov. 15, 1912: Patient has been working right along and feeling fine. For past fifteen weeks he has been working at Atlantic City as machine demonstrator (orange juice on Boardwalk) from 9 a. m. to 11:30 p. m. He did not miss a day. Weight is 123½ pounds, 7½ pounds more than at beginning of tuberculin treatment, thirty-seven months ago.

CASE 3.—G. M., foreman, aged 50, married, American. Diagnosis on admission, Oct. 27, 1909, pulmonary tuberculosis, moderately advanced; prognosis doubtful. Infiltration both upper lobes. Active symptoms began three years previously with pneumonia. Average weight in health, 160 pounds. Height, 5 feet, 8¼ inches. Weight on admission to dispensary, 133 pounds. Weight on return from Mont Alto, April, 1909, where he spent six months, 155 pounds. Patient still showed active lesions on both sides on return from Mont Alto and began slowly to deteriorate; was afebrile, but unable to work.

Treatment and Results.—Tuberculin begun July 5, 1910, over a year after return from Mont Alto; weight, 143 pounds. Patient received in all twenty-nine injections in a period of eight months. Three months after first injection patient stated that he felt much better; was stronger, had more endurance and ambition, and had taken a position of watchman, which was the first work he had done for past two years. On completion of injections, patient had returned to his regular work (foreman) and was working steadily and said that he felt better than he had at any time since illness began. Tubercle bacilli were present before and after tuberculin treatment. Physical signs those of an arrested lesion with evidence of chronic plastic pleuritis.

Dec. 5, 1912: Patient is 53 years old and has felt very well, but is out of work and unable to get anything to do. He says he feels better when he is working. He has a very slight cough and expectoration just after getting out of bed in the morning. There are a few small low-pitched crackling râles on left (pleuritic); both upper lobes are fibroid. Weight is 140½ pounds, 2½ pounds less than at beginning of tuberculin thirty months ago.

CASE 4.—A. W. (sister of S. W.), book-binder, aged 21, single, American. Diagnosis on admission, Feb. 1, 1910, pulmonary tuberculosis, moderately advanced. Prognosis doubtful. Infiltration right upper lobe and left apex. Active symptoms began two years previously with hemoptysis. Patient was under treatment at dispensary two months before being sent to Mont Alto, slowly losing ground. Average weight in health, 90 pounds. Height, 5 feet. Weight on admission to dispensary, 86½ pounds, in February, 1910. Weight on return from Mont Alto in July, 1910, where she spent three months, 91¼ pounds. Patient was observed for one month after leaving Mont Alto, during which time she felt weak, tired easily and was unable to work; was afebrile.

Treatment and Results.—Tuberculin was begun July 2, 1910, and patient received a total of thirty-six injections during a period of nine months. After having been on tuberculin for two months, patient felt so much better and stronger that she was permitted to return to work on half time. Her cough had entirely left her. Before the completion of her tuberculin course, she had returned to her regular work and could be seen by the nurse only on Sundays as she was out at her place of employment during the whole of each day. One year after last injection patient states that she feels as well now as at any time previous to her illness, and can do as much work. She is regularly employed daily and has been so right along.

Nov. 27, 1912: Patient feeling fine; no cough or other symptoms; working regularly (hours 8:30 a. m. to 5 p. m.); has not missed a day. Signs of arrested lesion. Weight 89¾ pounds, a loss of 1½ pounds from weight at commencement of tuberculin, twenty-nine months ago.

CASE 5.—S. W. (sister of A. W.), school-girl, aged 12, American. Diagnosis on admission, Feb. 17, 1910, marked tuberculous adenitis, cervical and axillary glands; probable bronchial glands. No pulmonary localization. Active symptoms began with enlargement of cervical and axillary glands and cough one year previously. Average weight in health unknown. Height, 4 feet, 9¼ inches. Weight on admission to dispensary, 75 pounds. This was distinctly a glandular case and the glands on both sides of neck were becoming rapidly larger (as big as hen's eggs), tenser and more tender. There were large glands in both axillae.

Treatment and Results.—Tuberculin was begun March 15, 1910, and patient received thirty injections during a period of eight months. Following the first few injections of tuberculin the glands became perceptibly less tender and after several months were greatly reduced in size and entirely painless; at the conclusion of the treatment the glands were barely palpable. Patient gained steadily in weight from 75½ pounds on first injection to 85 pounds on date of last tuberculin injection; had returned to school and was apparently in normal physical health.

Nov. 27, 1912: Patient is feeling well and has attended school regularly since. Examination of chest is negative. Glands in neck are palpable (about the size of a pea), but give her no trouble. Weight is 91¼ pounds, 15¾ pounds gain over weight at commencement of tuberculin, thirty-two months ago.

CASE 6.—Samuel W., tailor, aged 35, married, Russian. Diagnosis on admission, Feb. 1, 1908, pulmonary tuberculosis, moderately advanced; prognosis doubtful. Consolidation right upper lobe. Active symptoms began five years previously with influenza and hemoptysis. Average weight in health, 145 pounds. Height, 5 feet, 6 inches. Weight on admission to dispensary, 129 pounds. Weight on admission to Mont Alto, 117 pounds. Under dispensary treatment for six months, but failing steadily. Weight on return from Mont Alto, December, 1909, where he spent six months, 127 pounds. (Patient suffered while at Mont Alto with chronic gastritis and vomiting after meals.) Under treatment three months following return, but was slowly deteriorating; afebrile but unable to work.

Treatment and Results.—Tuberculin begun March 1, 1910 (weight 117¼ pounds), and patient received in all thirty-eight injections during a period of eleven months. The sputum for one year preceding injections showed the presence of tubercle bacilli. Since tuberculin injections were begun, no bacilli could be demonstrated in the sputum; three months of tuberculin greatly improved patient's condition and he was able to resume his work for the first time in three years. After the last injection the following information was elicited in the patient's own statements: "For past three years I was not able to attend to my work at tailoring and carrying bundles of clothes. Three months after first injection, I commenced to work at my trade and have been doing so for past seven months. I work ten hours daily and feel better in every respect. The cough, expectoration, 'wind,' appetite, digestion and sleep are very much improved, and I become less exhausted at work." Ten months after last injection patient is in good condition; works daily; lesion in the lung shows no activity.

Nov. 27, 1912: Patient working on full time (hours 7:30 a. m. to 5:30 p. m.); supporting family of eight; feeling well and strong. Both upper lobes fibroid; weight 121 pounds, a gain of 3¾ pounds over weight at commencement of tuberculin, thirty-three months ago.

CASE 7.—M. D., aged 15, single, American, occupation housework. Diagnosis on admission, July 6, 1908, pulmonary tuberculosis, moderately advanced; prognosis doubtful. Infiltration right upper lobe and left apex. Active symptoms began two years previously with cough, and loss of weight and strength. Average weight in health, 108 pounds. Height, 5 feet, 3 inches. Weight on admission to dispensary, 102 pounds. Weight on leaving sanatorium (White Haven), one month previously, where she had spent five months, 107¾ pounds. Patient was under systematic treatment for seven months, slowly deteriorating, but afebrile; tires easily and unable to work. Weight slowly went down to 99 pounds.

Treatment and Results.—Tuberculin was begun Feb. 1, 1910, and patient received a total of fifteen injections in a period of six months. As she developed a hypersensibility, the injections were given at long intervals. Her weight two months after beginning tuberculin treatment reached 109 pounds, which was approximately retained until the very hot weather of July and August. Weight at last injection in August was 105½ pounds. Patient states that she suffers from the hot weather, but cough and expectoration are must improved and she feels much stronger. She helps her mother about the house. Tubercle bacilli were found previous to the tuberculin, but not during or after the treatment.

Dec. 3, 1912: Patient in fine condition, working regularly in a department store. No cough or other symptoms. Weight, 130 pounds, 31 pounds more than weight at beginning of tuberculin treatment, thirty-four months ago.

CASE 8.—W. B., weaver, aged 40, single, English. Diagnosis on admission, Dec. 16, 1908, pulmonary tuberculosis, far advanced; prognosis doubtful. Infiltration upper and middle lobes right side; consolidation with cavitation, left upper lobe. Active symptoms began two years previously with severe hemorrhage. Previous to admission patient had spent three months in tuberculosis wards, Philadelphia General Hospital. He was six months under treatment at dispensary before he was sent to Mont Alto, losing ground steadily. Average weight in health, 130 pounds. Height, 5 feet, 9¼ inches. Weight on admission to dispensary, 110½ pounds in December, 1908. For one year after his return from Mont Alto he was under most systematic treatment. He attempted to return to work but could not stick at it. He was slowly failing; had no appetite, poor digestion and slight fever; cough and expectoration troublesome.

Treatment and Results.—Tuberculin was begun Feb. 15, 1910; patient received thirty-nine injections during a period of twelve months. Four months of tuberculin treatment found the patient with a net gain of 10½ pounds from the time of first injection; cough and expectoration much less and great gain in general health; entirely afebrile. Patient went to work four months after beginning tuberculin, and continued at his work as night watchman throughout entire tuberculin treatment, reporting regularly once a week, except toward the end when his earning capacity having increased and his general health being so much better, he began to consume alcohol in varying amounts, became irregular in his habits and finally was lost sight of. He died April, 1912.

CASE 9.—E. S., tailoress, married, Russian. Diagnosis on admission, Jan. 27, 1909, pulmonary tuberculosis, moderately advanced; prognosis fair. Consolidation right upper lobe. Active symptoms began two years previously with attack of influenza and hemorrhage. Average weight in health, 135 pounds. Height, 5 feet, 3½ inches. Weight on admission to dispensary, January, 1909, 114 pounds. Weight after return from Mont Alto, Aug. 25, 1910, where she staid eight months, 141¾ pounds. She returned to work, took cold, and began to lose weight; had some cough and expectoration, slight fever; was unable to continue at work.

Treatment and Results.—Tuberculin begun October 4, 1910; weight, 138 pounds; patient received a total of forty-two injections in a period of twelve months, the treatment having been started at Mont Alto. Patient returned to work (three days a week), Nov. 22, 1910, and full time in December, 1910. Weight on conclusion of tuberculin treatment, five months after return from Mont Alto and on full-time work, 140¼ pounds. Fourteen months after last injection, patient is working regularly daily. Cough and expectoration are much less than formerly; patient is stronger and feels better in every way. Lesion involving right upper lobe is in an arrested stage. Tubercle bacilli were present before and after tuberculin treatment.

Nov. 27, 1912: Patient has been working steadily ever since in tailor-shop, supporting self and two children. She still has some cough and expectoration and râles on right side. Weight is 130 pounds, a loss of 8 pounds over weight at commencement of tuberculin twenty-five months ago.

CASE 10.—C. McG., housewife, aged 41, married, Irish. Diagnosis on admission, March 16, 1909, pulmonary tuberculosis, far advanced; prognosis unfavorable. Consolidation upper and middle lobes, right side and left apex. Active symptoms began four years previously with pleurisy. Patient was at White Haven five months previous to admission; returned April, 1908. Average weight in health, 155 pounds. Height, 5 feet, 7 inches. Weight on admission to dispensary, 142½ pounds. Weight on return from Mont Alto in July, 1910, where she spent four months, 145 pounds. Patient was treated one year at dispensary before being sent to Mont Alto, during which time her weight remained stationary and she was afebrile, but suffered with several attacks of blood-spitting. No tuberculin was given during this time.

Treatment and Results.—At Mont Alto patient received a course of eleven injections of tuberculin, was free from blood-spitting and said she felt much improved. She asked to have her tuberculin continued and injections were resumed at dispensary. She received eleven more, or a total of twenty-two injections in eight months. At the end of this course patient weighed 142½ pounds, felt much better and stronger, cough and expectoration were less, and she resumed her work. Six

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months later patient was in good condition and doing her own housework. Patient died August, 1911.

CASE 11.—G. S., ironworker, aged 42, married, American. Diagnosis on admission, Feb. 11, 1909, pulmonary tuberculosis, moderately advanced; prognosis doubtful. Consolidation both upper lobes. Active symptoms began five months previously with cough, hemoptysis and loss of weight. Average weight in health, 160 pounds. Height, 5 feet, 7 inches. Weight on admission to dispensary, 150 pounds. Weight on return from Mont Alto, Aug. 11, 1909, where he spent five months, 163¾ pounds. This case was complicated by chronic tuberculous laryngitis, and the patient did not improve much at the sanatorium. He had much cough and expectoration on return (filled two sputum boxes at night) and was unable to work. Tubercle bacilli were constantly present; no fever.

Treatment and Results.—Tuberculin treatment was begun Feb. 15, 1910, six months after return from Mont Alto. Patient's weight was 157 pounds; he received twelve injections during a period of four months. Patient was much improved in general health, cough and expectoration noticeably decreased, and he felt so well that he insisted on returning to work, securing a position as watchman. One year after last injection patient was working steadily and feeling fine.

Nov. 27, 1912: Patient has been working for some months for Adams Express Company, doing trucking of heavy freight, much heavy lifting (hours from 6:30 p. m. to 7 a. m.), twelve hours of heavy night work. Three weeks ago packing-case slipped and fell on shoulder, breaking his left arm. Patient has been worse since his injury, coughing and spitting more and suffered much pain in hospital. He lost 10 pounds in three weeks; weight previous to accident 150 pounds, a loss of 7 pounds from weight at beginning of tuberculin treatment thirty-nine months ago.

CONCLUSIONS

The conclusions which we feel justified in drawing from a thorough familiarity with the course of health in the cases above described for a long period of time is as follows:

1. These cases were all (with one exception, the glandular case) of an advanced chronic fibroid type, which had under treatment shown a fairly good resistance, but the patients, in spite of everything which could be done for them, were unable to work and slowly deteriorated in health, weight and strength; this deterioration was at least checked in every case while tuberculin was being used.

2. Further, every patient was distinctly improved in health and was able to resume and remain at regular work during or following the course of tuberculin.

3. We recognize the fallacy of attributing too much to any one factor or therapeutic measure in chronic diseases generally, and in tuberculosis particularly. In emphasizing the fact that these patients were so improved and were able to return and continue at work, we do not mean to infer that such results are not seen in chronic advanced tuberculosis untreated by tuberculin; but we do argue that from the previous course of health in these particular cases under most systematic treatment, the tuberculin at least seemed to be the sole added factor responsible for the improvement.

4. The tuberculin apparently cured the patient with glandular tuberculosis.

5. Tubercle bacilli disappeared from the sputum in several of the cases during the course of treatment, but the majority of the patients still showed the presence of tubercle bacilli on the completion of the full course of injections.

6. The local condition in the lungs showed a distinct improvement as evidenced by the disappearance of râles.

7. In advanced chronic tuberculosis, when there is fair resistance and little or no fever, tuberculin is unqualifiedly a valuable therapeutic measure, or at least proved so in the above series.

8. The reactions with Dixon's tuberculin (tubercle bacilli extract) were uniformly mild and without unfavorable influence on the course of treatment.

9. All the different preparations of tuberculin represent an effort to retain the favorable toxins of the bacillus and to eliminate those which are deleterious to the human organism; and we believe that for general use at least, particularly in ambulatory cases, it is safer and better to select a preparation of mild potency and toxicity, and that in the so-called Dixon's fluid we have a safe and effective tuberculin of this type.

218 South Fifteenth Street—1002 Jackson Street.

HEMORRHAGE CONTROLLED IN TWO CASES BY LOCAL APPLICATION OF HORSE-SERUM

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For a number of years it has been an accepted procedure to employ serum hypodermatically in hemorrhage due to a diminished tendency of the blood to coagulate, and experience has proved this remedy very effective. Usually horse-serum has been employed in varying quantities and the results have been excellent in hemophilia, purpura, melena neonatorum and in operations associated with a long-continued icterus. Latterly transfusion has been performed, the donor being preferably one of the relatives.

The present opinion is that these serums undoubtedly have the effect of increasing the coagulability of the blood.

The following case-reports are offered as a contribution to bleeding that was controlled by the local application of the serum:

CASE 1.—*History.*—The patient, aged 49, gave a history of having had, several years before, intermittent nose-bleed which was cured only after the turbinates had been removed; he had a moderate degree of arteriosclerosis. He had been suffering for some time from an irritable bladder and a cystoscopic examination revealed a cyst at the internal urethral opening; the cyst was cauterized by Dr. Henry Meyer with the operation cystoscope; there was no hemorrhage at the time.

The night of the operation the bladder became very much distended with blood-clots and the bladder could be evacuated only with the greatest difficulty. Bleeding persisted for a week and then became very profuse. When I saw the patient he was much exsanguinated. The bladder reached to the navel and was firm with blood-clots.

Treatment.—A cystotomy was done and the distended bladder was emptied of its coagulated blood; the cystic tumor was found to have been burned away at the previous operation and as a result there was a small bleeding area which was cauterized with the actual cautery; the bladder was then packed with iodoform gauze and a recurrence of the bleeding was not expected. The hemorrhage, however, never ceased for seven days despite the application of various astringents, namely, tincture of iron, alum, epinephrin and antipyrin, all of which were applied to the bleeding area and followed by packing. Horse-serum was also injected. The tissues of the abdominal wall bled as persistently as did the area in the bladder. There was a continuous ooze of bright red blood and the patient's condition was growing exceedingly grave.

At this time Dr. Jellinek suggested that horse-serum be applied locally. A flask of horse-serum was poured into the

bladder; the hemorrhage seemed to cease almost at once and from that time on there was no further bleeding.

It seemed warranted to assume that the hemorrhage had been controlled by the local application of the serum.

Case 2.—*History.*—The patient, a woman aged 45, gave a history of jaundice that had been present for three months; the icterus was not very intense although it had been persistent. Coagulation time of the blood was eight minutes. She had an enlarged gall-bladder with no history of pain.

The diagnosis of carcinoma involving the deeper gall-ducts was made.

Treatment.—The patient might have had a preliminary transfusion but the icterus had not been sufficiently intense and I felt that exploration could be safely performed. The gall-bladder was exposed and about 8 ounces of dark green bile of the consistency of tar was removed; no gall-stones were found. A cholecystenterostomy was to be performed when the gall-bladder began to bleed; there had been no curettage of the viscus wall by a sharp spoon; only a dull spoon had been introduced, as the finger could not reach to the bottom of the gall-bladder. Bleeding became excessive and could not be controlled even after five yards of soft iodoform gauze had been packed into the gall-bladder. The hemorrhage became alarming and the patient was given 20 c.c. of horse-serum hypodermatically without any apparent result. Then a flask of horse-serum was poured into the gall-bladder; coagulation was immediate and there was no question in the opinion of those present but that the local application of the serum stopped the bleeding. The gall-bladder was then repacked and bleeding did not recur.

350 Post Street.

A CASE OF POISONING BY LITHIUM

PRESENTING SOME NEW FEATURES *

S. A. CLEAVELAND

CLEVELAND

During an investigation on the action of uric acid under Professor Haskins, I had occasion to take rather large doses of lithium chlorid, and experienced toxic symptoms differing in some respects from the hitherto described phenomena of lithium poisoning.

In the first experiment, 2 gm. of the chlorid were taken in a glass of water after each meal for three meals (about 1 p. m., 9 p. m. and 7 a. m.) and then, after skipping one meal, another dose was taken about 7 p. m., making a total of 8 gm., about 125 grains, in twenty-eight hours. Symptoms showed themselves three or four hours after the first dose, consisting in slight dizziness and fulness in the head. Nothing more was noted after the second dose, which was taken in the evening. Soon after the third dose there was so much blurring of vision that it was impossible to read anything smaller than the largest headlines of a newspaper.

Dizziness and ringing in the ears were quite marked. There were also great general weakness and marked tremors. The fourth dose was taken at night, and the dizziness became so marked that the room seemed to go round all night, and sleep was almost impossible. The next morning the condition approached prostration. The eye symptoms were exaggerated and the dizziness, weakness and tremors were so intense that there was staggering and it was necessary to go to bed. The eye and ear symptoms lasted about a day and a half after the last dose. The weakness and tremors persisted for five days. At no time were there any gastro-intestinal symptoms—there was no abdominal pain, diarrhea or gastric irritation, and the appetite was very good throughout the whole time.

Several months later the experiment was repeated to make certain that the effects were really due to lithium. Only two doses of 2 gm. each were necessary to bring on the dizziness, ringing in the ears and blurring of vision. The general symptoms were much less marked than before, but there was some weakness for a day or so. Again there were no gastro-intestinal effects.

The notable features of these observations are the marked muscular and general prostration; the occurrence of vertigo and eye and ear symptoms resembling those of cinchonism, and the entire absence of gastro-intestinal symptoms.

According to the literature of lithium poisoning, as quoted by Good,[1] the common symptoms consist in marked prostration and gastro-intestinal irritation. The latter was entirely absent in my case, while the striking cinchonism effects do not appear to have been described by any previous reporters; but the doses taken by me (60 to 90 grains per day) were two or three times greater than those which seem to have been taken in the cases reported in the literature.

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* From the Medical School of Western Reserve University.

1. Good, C. A.: Am. Jour. Med. Sc., February, 1903.

FECAL IMPACTION IN THE ILEUM FOR FIFTY-THREE DAYS, WITH RECOVERY

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The patient, Mr. H. L., whose case (No. 77,911) I report had intestinal obstruction at the age of 60, due to carcinoma of the sigmoid colon, and relieved after seven days by laparotomy and cecostomy; at 62 he had fecal impaction, lasting forty-nine days and relieved by a ride on a jolting lumber-wagon; at 63 he had fecal impaction and accumulation in the ileum, lasting fifty-three days and relieved by lavage of the ileum through the artificial anus; and he died of acute obstruction from prolapse of the cecum through the cecostomy fistula four years after the establishment of the artificial anus.

The patient was one of a family of thirteen children. He was born in England, came to the United States at the age of 23, and lived in New York State during the last sixteen years of his life. He married at the age of 33 and had two children. His occupation was always that of a farmer, and his out-of-door life would undoubtedly account in large part for his great vitality. The family history is negative, except that the patient's mother died at 48 of carcinoma of the breast. The patient's father died at 72, a paternal uncle at 70, a paternal aunt at 90, the maternal grandfather at 75 and the maternal grandmother at 90 years of age.

The patient was never ill and had never had a physician until he was 60 years of age, except that at 23 he accidentally injured both feet with an ax while chopping wood. He used practically no alcoholics. He smoked about 10 cents' worth of tobacco a week in a pipe, but never used cigars or cigarets. He drank one cup of coffee a day up to three years before his death, and tea three times a week. He ate meat in small quantity on an average of once a day all his life, and pepper, vinegar, mustard and other condiments in moderation.

Intestinal Obstruction from Carcinoma of the Sigmoid Colon.—At 60 years of age the patient had intestinal obstruction, for which cathartics and enemas were used for seven days without success. The patient's abdomen was distended, and he was in great pain, but vomited little. He had passed blood by rectum three months previously, but had lost little in weight. Dr. Edgar R. McGuire of Buffalo, who was called in consulta-

tion by the patient's home physician, advised an exploratory laparotomy, and performed the operation May 19, 1908. On opening the abdomen in the median line, he found a large tumor of the sigmoid which so involved the descending colon as to preclude a left inguinal colostomy. The tumor was without hesitation pronounced malignant; and its persistence with complete occlusion of the colon for four years after the operation would seem to exclude diverticulitis and obstruction from certain other causes.

A cecostomy was performed, the opening in the cecum being placed at the level of the ileocecal valve. The patient was soon able to do his usual work about the farm, and he found little inconvenience with the artificial anus, except that about every two weeks he had diarrhea. He took cathartics and enemas occasionally. The cecum frequently prolapsed through the artificial anus but was easily replaced by the patient. No colostomy plug or cap was worn, merely a simple pad of cloth which was changed from time to time. Practically no fecal matter was passed by rectum during the remaining four years of the patient's life, and only occasionally blood-stained mucus.

Fecal Impaction at the Age of Sixty-Two.—In September and October, 1910, two and a half years after the establishment of his cecostomy, the patient went forty-nine days without having a movement of the bowels, either through the artificial anus or through the rectum. During that time the patient was free from headache and suffered very little from abdominal distention. He was inconvenienced by the accumulation of gas; but as soon as the gas escaped through the artificial anus, he was restored to a comfortable condition. About four weeks after the beginning of the fecal impaction, the urine became dark red and continued so until the patient obtained relief from the impaction.

The patient's bowels began to move after seven weeks, the favorable termination of the obstruction being brought about by the jarring of a ride on a lumber-wagon. The bowels moved intermittently for a week through the artificial anus, the material passed being chocolate brown in color and not offensive in odor.

Judging from the obstruction which took place one year later, it would seem that the determining factor in the production of the impaction was the ingestion of fruit with the seeds, and of imperfectly masticated coarse vegetables, which were abundant at that time of year.

The patient's expulsive power was certainly less efficient than normal by reason of the artificial anus, and he was less solicitious about the initiation of defecation than one would expect; but the principal factor in bringing about the impaction undoubtedly comes under the head of indigestible food residue.[1]

Fecal Impaction in the Ileum at the Age of Sixty-Three.—After the relief of his obstruction in 1910, our patient had no further difficulty until Aug. 21, 1911, when his bowels ceased to act through the artificial anus, the exact date being fixed by the patient and by his wife as being one week before the beginning of the county fair. The patient was prevented from attending the fair by the fear that his bowels would begin to move while he was away from home. The patient was not greatly concerned about his condition, and was fairly comfortable until seven weeks had passed. He was in daily expectation that some fortuitous circumstance would bring relief, as had his ride on the lumber-wagon the preceding year.

During the time of the fecal impaction, the patient passed only gas through the artificial anus and nothing by rectum except a small quantity of blood-stained mucus. During the entire time he went about his work on the farm, and ate three meals a day, his appetite beginning to fail only a day or two before he presented himself for treatment.

The following list of foods eaten at approximately 159 meals during the time of the impaction is interesting from the point of view of the fecal residue to be expected: grapes, tomatoes, raspberries, strawberries, elderberries, apples, pears, peaches, prunes, cherries and melons; potatoes, beets, carrots, turnips, cucumbers, squash, pumpkin, string beans, lima beans, corn and peas; eggs, milk, cream and butter; bread and oatmeal; beef, bacon, chicken, mutton, salmon and sardines; pies of various kinds; cereal coffee, tea and condiments.

Oct. 12, 1911, fifty-three days after his last bowel movement, the patient presented himself for treatment, having been referred to the hospital by his home physician. The patient had taken cathartics for four weeks and had used enemas by rectum three and four times a day for two weeks, naturally without result. Enemas of a pint of water at a time had been easily passed into the cecum through the artificial anus twice a day for a week, but only a few drams of water returned each time, the rest of the water being absorbed. This indicated that the obstruction was not at the cecostomy opening.

Condition of Patient on Fifty-Third Day of Impaction.—At this time the patient had few symptoms. He was uncomfortable from the abdominal distention and said that his abdomen felt numb. He was able to expel gas through the artificial anus. The appetite was beginning to wane, and the patient had eructations of gas. He was walking about and was not in the least nervous or apprehensive about his condition. He had none of the symptoms that might possibly have been expected—headache, vertigo, pain, dyspnea, palpitation, nausea, vomiting, abdominal rigidity or difficulty in urination. For several weeks the urine had been red.

The patient had a slight rise of temperature on arrival, the temperature being 100 F. and the pulse 88. Within two hours however, the temperature became 98.4 F. and the pulse 69, and continued normal thereafter. The systolic blood-pressure was 84 mm. for the brachial artery.

The patient had lost in weight, this being most noticeable in the arms and legs. The skin was dry but not more than normally pigmented. The pupils were equal and normal in size. The tongue was somewhat coated. The patient had twenty-six teeth, all but one of them being sound.

The heart and lungs were found normal, and points of special interest were found only in the examination of the abdomen. The abdomen showed the scars of the incisions made at the time of establishing the artificial anus. The cecostomy opening was surrounded by an area of unirritated though slightly pigmented skin. The opening was circular and only large enough to admit the little finger with difficulty. By depressing the abdominal wall, the finger in the artificial anus could be made to palpate across the cecum a mass which gave the impression of an accumulation of fruit seeds.

There was practically no tenderness in the abdomen, except on pressure over the tumor in the left lumbar region. The abdomen was distended, the principal distention being due to a mass which lay to the left of the median line from the pubes to the costal arch, and which could be moved slightly from side to side by pressure over the abdominal wall. The left lumbar region was easily compressible, and there was no evidence of peritoneal effusion. There was resonance in the epigastrium and dulness in the right lumbar region. (A subsequent skiagram showed the liver rotated to the right by the abdominal distention.)

1. Many cases are recorded in which impaction and intestinal obstruction have been caused by fruit-seeds eaten with the fruit, and by imperfectly masticated nuts and grains. Cherry-seeds seem to have been particularly potent in this regard. Impaction in the rectum has been caused by raisin-skins and seeds in a boy 9 years of age (Lesage, L. A.: Jour. de méd., chir., pharm., etc., 1812, xxv, 56); by grape-skins and seeds in a man 25 years of age (Thornton, J. B.: Boston Med. and Surg. Jour., 1896, cxxxv, 339); by watermelon-seeds in an adult negro (Holliday, W. Z.: Med. Rec., New York, 1888, xxxiv, 508); by cherry-stones and prune-stones in a man 27 years of age (Homans, J.: Boston Med. and Surg. Jour., 1895, cxxxiii, 164); by imperfectly masticated whole wheat in a man 45 years of age (Somers, G. B.: Occidental Med. Times, Sacramento, 1894, viii, 601); by chips of cinnamon bark eaten by a boy 11 years of age (Guy's Hosp. Gaz., 1893, vii, 245); and by tigernuts eaten by a 12-year-old boy (Ibotson, E. C. B.: Lancet, London, 1905, i, 1197). J. E. Moore (Internat. Clin., 1911, 21S, ii, 155) reports a case in which obstruction in the cecum and ascending colon was caused by chestnuts eaten daily for some time. Fatal cases of impaction at the ileocecal valve have been caused by plum-stones in an adult (Maunsell, S. E.: Indian Med. Jour., Allahabad, 1885, iv, 126), and by unripe, unmasticated blackberries in a 5-year-old child (Gornall, J. G.: Brit. Med. Jour., 1896, ii, 1035). E. C. Evans (St Louis Med. and Surg. Jour., 1854, xii, 308) has reported two fatal cases of obstruction caused by husks of parched corn, one in the jejunum 5 inches below the duodenum in a girl of 18, and one in the duodenum in a boy 10 years of age.

Digital examination of the rectum gave no information of immediate value, beyond the fact that intra-abdominal pressure was increased.

Treatment of the Impaction.—Lavage through the artificial anus was commenced at 8 o'clock in the evening of the day the patient presented himself for treatment, and was continued uninterruptedly for seven hours, during which the patient fell asleep a number of times and experienced no inconvenience except for painful cramps in his left leg.

That the treatment was not altogether without danger was recognized. Great care was exercised in inserting the tube, always well lubricated with petrolatum, and in conducting the lavage so far as possible with the lavage tube *in situ*, lest the bowel should be separated from its attachment to the abdominal wall by any undue violence.

The ileum was greatly dilated by the prolonged fecal accumulation, and its walls undoubtedly weakened by stercoral ulceration. The quantity of water introduced at any one time and the pressure over the abdomen in encouraging the outflow through the tube were carefully regulated.

The lavage of the intestine through the artificial anus was carried out with the patient in the dorsal position, near the right side of the bed and on a Kelly pad. Water was readily passed into the bowel, but could not at first be withdrawn on account of the tube having entered a mass of feces. Many times during the lavage, the tube became clogged with hard fecal masses—seeds of grapes, berries and apples, and undigested portions of string beans. At times it was necessary to remove the tube, although a large-sized colon tube was used, and to strip along it the obstructing masses which it was impossible to dislodge with water under considerable pressure. As the lavage progressed, the tube could be freely passed 10 or 12 inches through the ileocecal orifice into the greatly dilated ileum, the water distending the bowel in advance of the tube. The outflow was often interrupted but usually could readily be restored by withdrawing the tube for a few inches. When the tube was passed directly downward parallel to the median line of the body, it was arrested by the cecum at a depth of about 4 inches.

As the distention was relieved, it was observed that the abdomen was being emptied along a curved line sweeping from the artificial anus into the pelvis, and upward toward the left hypochondrium. Careful pressure along this line accelerated the outflow through the tube, especially when combined with pressure over the dilated cecum and ascending colon. When the abdomen was flaccid and the intestine comparatively empty, the stomach was still distended and was more prominent than at the beginning of treatment. In view of the fact that the stomach would probably empty its contents into the small intestine without difficulty, it was not thought advisable to subject the patient to gastric lavage.

Nearly 60 liters (63 quarts) of warm water were used in the lavage. The washings resulting from the first 18 or 20 liters (19 or 21 quarts) were about as thick as pea purée, of a dark chocolate-brown color and not offensive in odor. The last 40 liters of washings were of the consistency of pea soup. The washings acquired a fecal odor in a few hours of exposure to the air.

The patient was given a full tub bath, and although his night had been so fully occupied, he insisted on dressing himself at his usual hour of 5:30 in the morning, and waited somewhat impatiently for his breakfast. The distention of the abdomen had been so much reduced by the treatment that the patient's vest, the lower part of which could not be buttoned the night before, now hung loosely when buttoned. The patient's appetite improved rapidly, so that by the fifth day he was eating more than 2,000 calories a day.

The Fecal Accumulation.—The mixed washings obtained by lavage of the bowel measured more than 61 (61.750) liters (65 quarts), and weighed more than 62 (62.493) kg. (138 pounds). They therefore had a specific gravity of 1.012, from which the average daily fecal residue might be roughly estimated at 32 gm. (1⅛ ounces) of dry material. A more accurate estimation was reached by drying an average sample, the dry residue being 3 per cent. by weight of the washings. Three per cent. of the total weight of the washings gives 1,874 gm. (4⅛ pounds) of dried fecal residue as the accumulation of fifty-three days. The average daily fecal residue was therefore 35.36 gm. Calculated in the proportion of four parts of moist feces to one part of dried residue (Landois), the fecal accumulation for which the patient sought relief approximated more than 16 pounds. The fecal accumulation might have been expected to be about 7,155 gm., since Voit gives 135 gm. as the average amount of moist feces eliminated daily by a normal man on a mixed diet.

Examination of Feces.—A sample of the washings, carefully examined in the laboratory, contained the fruit-seeds and undigested food remnants already mentioned, and many large crystals of triple phosphate which had the appearance macroscopically of sand. Besides phosphates no other crystals were found. Traces of blood were found, which may have resulted from the ingested meat, but probably originated in stercoral ulcers in the bowel. Gram stains and counts of bacteria in samples from each of the ten jars in which the washings were collected gave an average of 17.5 per cent. of Gram-positive and 82.5 per cent of Gram-negative bacteria present. The reaction was strongly alkaline. There were digestive enzymes present, and the material did not give the biuret test, which would indicate complete digestion or bacterial decomposition of the protein.

ANALYSES OF URINE

	Samples			
	1	2	3	4
Quantity (c.c.)	400	500	900	1,200
Color	Red.	Yellow.	Amber.	Reddish-yellow.
Specific gravity	1.020	1.002	1.003	1.013
Total solids (gm.)..	18.64	2.33	6.29	36.34
Acidity (c.c. tenth-normal acid). ...	71	10	65	110
Urea	10.00	1.50	3.60	16.80
Ammonia (gm. NH_3)	.212	.075	.205	.212
Chlorids (gm. NaCl)	2.80	.10	.00	10.32
Sugar	0	0	0	0
Albumin	0	0	0	0
Bile	0	0	0	0
Blood	0	0	0	0
Indican (Folin scale)	4	0	0	0
Indolacetic acid	Abundant.	Trace.	Trace.	0
Microscopic Findings:				
Crystals	0	0	0	Many calcium oxalates.
Epithelia	Few.	Few.	Few.	Few.
Casts (No. in field).	0-1 Hyaline.	0	0	0

An examination of feces twenty-four days later gave the following result:

Amount of moist sample, 21 gm.; amount of dried residue, 3.37 gm.; color, brown; odor, normal; form, semiliquid; food remnants present; mucus normal in amount; reaction slightly acid; enzymes present; biuret reaction given; blood detected by chemical tests; no crystals present except crystals of fatty acid; some fat globules present; no other microscopic findings of note; bacteriologic examination showed 18 per cent. of Gram-positive and 82 per cent. of Gram-negative bacteria.

Blood Examination.—The patient's hemoglobin was 79 per cent. of normal; red cells 4,750,000 per c.mm., or 95 per cent.; white cells 8,200 per c.mm., or 109 per cent., normal being taken to be 7,500 per c.mm. The red cells were normal in size and shape. Differential count of 270 leukocytes gave 18.5 per cent.

of small lymphocytes, 5.1 per cent. of large lymphocytes and 76.3 per cent. of polymorphonuclear neutrophils.

Urinary Examination.—At the beginning of the lavage of the intestine through the artificial anus, the patient passed red urine (Sample No. 1), two hours later light yellow urine (Sample No. 2), and in the morning amber urine (Sample No. 3). For comparison the analyses of these three specimens are tabulated, with an analysis (Sample No. 4) made twenty-four days later.

RELATION OF URINARY AND FECAL FINDINGS TO SYMPTOMS

The color of normal urine is due principally to the yellow pigment, urochrome. The pronounced red color of the patient's urine was undoubtedly due to the reddish pigment urobilin, which is derived from bile pigments (Maly) and from hematin (Hoppe-Seyler) by reduction. Bile pigments, none of which left the intestine in feces during the impaction, and blood, which may have resulted from stercoral ulceration, or have been derived from the meat ingested, were without doubt the source of the urobilin in the patient's urine.

Indigo-red, also called urorubin, has been found in the urine in intestinal obstruction, originating from indoxyl-sulphate (indican). This substance might possibly have been found in the urine in this case. No investigation was made to determine its presence.

There was no bilirubin in the urine, from which fact, and from the absence of jaundice, we may safely conclude that the intestinal stasis did not cause biliary obstruction, catarrhal or otherwise.

Indolacetic acid was present in large amount in the urine, but the indican was only slightly increased. The products of putrefaction in the intestine were thus rendered inert by combination with organic acids as well as with sulphates.

The occurrence of indican in small amount in this case is in marked contrast to the large amounts of indican found in acute obstruction of the small intestine. Nothnagel states that in occlusion of the small intestine there is a large, and occasionally enormous, increase of indican in the urine; in occlusion of the colon, on the contrary, the indican is increased only when this lasts a long time and when there is stagnation of intestinal contents above the ileocecal valve.

The great number of crystals of triple phosphate in the feces is a further indication that there had been putrefaction in the intestine. The absence of toxic and reflex symptoms was probably due in large part to the following facts:

1. The intestinal gases were able to find exit by eructation from the stomach and by passage from the artificial anus, as well as by elimination in the expired air.

Fig. 1.—The stomach filled with bismuth suspension. The upper marker is placed over the navel, the lower marker at the cecostomy opening. The fine flaky shadows represent bismuth which has just passed out of the stomach and is en route to the small intestine. Note the width of the stomach shadow, indicating the true dilatation.

Fig. 2.—The colon injected by rectum. The bismuth column has filled the colon as high as the crest of the ilium, locating the obstruction at this point, beyond which it does not pass. The density of the upper right abdomen represents the liver, which is rotated so that none of it lies in the epigastrium.

2. The stasis of food in the small intestine was favorable to complete digestion and absorption of the protein, leaving little for putrefaction.

3. The bacteria of the small intestine were protective in producing substances, such as lactic acid, to inhibit the activity of putrefactive organisms.

4. A more or less constant balance was maintained between production and absorption of toxic substances, and their elimination.

Fluoroscopic and Skiagraphic Examination.—On the day following his arrival, and after his fecal impaction had been relieved, the patient spent the afternoon in the *x*-ray laboratory, where his stomach and small intestine were examined after a bismuth meal, and his colon after bismuth enema by rectum and after bismuth enema through the artificial anus.

The examination of the patient was conducted by Dr. A. J. Read, acting roentgenologist in the absence of Dr. J. T. Case. His findings made clear the changes brought about in the

gastro-intestinal tract by the prolonged impaction and confirmed the diagnosis of tumor in the sigmoid colon. The fluoroscopic report will first be given, and then a description of the accompanying illustrations made from the skiagrams.

The heart and lungs were incidentally examined with the screen and were found radiologically normal.

The patient was given his first bismuth meal, consisting of 2½ drams of bismuth oxychlorid in 8 ounces of oriental clotted milk. The bismuth meal entered the stomach in a normal manner, and passed at once to the lower pole, which was about an inch below the level of the umbilicus. The stomach was enormously dilated but was completely empty within four hours.

The fluoroscopic examination was repeated two days later, a larger bismuth meal being given so as to obtain more accurate information in regard to the dilated stomach and small intestine. The meal consisted of 7½ drams of bismuth oxychlorid in 24 ounces of buttermilk. The observations of the previous examination were confirmed, and the lower pole of the stomach was found considerably displaced to the right, the pylorus being

Fig. 3.—The colon is shown injected by rectum and through the cecostomy opening. Note the enlargement of the cecum.

about 4 inches to the right of the median line and 3 inches above the level of the umbilicus. The pylorus was found close under the liver, which was rotated into the right lumbar region, the left lobe being in the right hypochondriac region with none of the liver in the epigastrium. Food began passing almost immediately into the small intestine, the loops of which gave a very broad shadow. The food had nearly all passed out of the stomach at the end of seven hours, and a portion of the meal was entering the cecum. There was thus little delay in the passage of the meal to the cecum, in spite of the long overdistention and the greatly dilated condition of the small intestine.

The patient was given a bismuth suspension by rectum, which passed unobstructed through the rectum and sigmoid colon to a point 2 inches below the left iliac crest. At this point its progress was completely interrupted (by the tumor).

Injection of a bismuth enema through the artificial anus showed the cecum and first part of the colon, but the bismuth did not pass beyond the hepatic flexure. The artificial anus was shown by a metal marker to be in the cecum at the level of the ileocecal valve. The cecum, which extended 4 inches lower than the ileocecal junction, and the ascending colon were found greatly dilated.

Indications Against Surgical Operation.—The question of removal of the tumor in the sigmoid colon after relief of the impaction was considered, but it was decided that the patient's condition would not permit of safe recovery from any surgical operation extensive enough to eradicate the tumor and involved tissues. It was believed that there were metastatic growths, although positive evidence was lacking. It was thought that with proper care of the bowels, and management of the artificial anus, the patient would live comfortably.

Subsequent History.—The following history was obtained from the patient's family. On his return to his home in New York State in November, 1911, the patient felt fairly well and was able to walk about the neighborhood; but he was soon confined to the house by the cold weather and by pain in his left thigh. There was weakness and wasting of the muscles of the left thigh; and the pain, which was worse at night, was associated with anesthesia, paresthesia and coldness of the limb. No neurologic examination was made to determine whether the symptoms were due to metastatic growth in the spine or to direct involvement of the lumbar plexus in the tumor mass.

Prolapse of the Cecum Through the Artificial Anus.—The patient was reasonably comfortable until April, 1912, the bowels being easily managed by enemas through the cecostomy opening. April 20 the patient ate a little more than usual, and during the night the cecum prolapsed for about 5 inches through the artificial anus. The prolapsed bowel was caught in the grasp of the tightly contracted cecostomy, and it was found impossible to effect reduction, although I am informed that the examining finger could be passed through the apex of the presenting bowel down to the constricting ring. The artificial anus was completely obstructed and the patient suffered with the symptoms of acute intestinal obstruction—distention with gas and accumulated intestinal contents, intolerable pain, which was with difficulty controlled by opiates, and at the last fecal vomiting. The surgeons of the nearest town, who were called in consultation, decided that the patient was too feeble to undergo the necessary surgical interference and the patient was made as comfortable as possible till his death, April 27, 1912, one week after the prolapse of the cecum and almost four years after the establishment of the artificial anus. No post-mortem examination was made.

CONCLUSIONS

1. Cecostomy may be complicated (a) by contraction of the opening, requiring dilatation from time to time, (b) by fecal impaction, necessitating irrigation through the artificial anus, and (c) by prolapse of the cecum through the cecostomy fistula.

2. Fecal impaction in the ileum in the case herewith reported was due principally to the ingestion of fruit-seeds and imperfectly masticated vegetables such as string beans, which became impacted at the ileocecal orifice.

3. Mere fecal accumulation does not cause urgent symptoms as long as the intestinal gases have opportunity of exit. The distention may produce displacement of the liver and stomach without marked interference with their functions.

4. The urine became dark red from the elimination of bile pigments and hematin reduced to urobilin in the intestine; and the urine contained a few hyaline casts, but no albumin.

5. Roentgen-ray examination of the digestive tract after bismuth meals and bismuth enemas was valuable in estimating the extent of the changes which resulted from the impaction, and in confirming the exact location of the tumor.

6. Treatment to be effective must be persevering and should be conducted with full knowledge of the probable

existence of stercoral ulceration in a greatly distended intestine, and of the possibility of separating the bowel from the colostomy opening by any undue violence.

7. Prolapse of the cecum through the artificial anus may prove fatal unless skilful surgical attention is promptly available.

TREATMENT OF ACUTE DACRYOCYSTITIS *

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The purpose of this paper is chiefly to call attention to a procedure in the treatment of acute dacryocystitis which, although first advocated by Agnew over forty years ago,[1] has been generally overlooked or forgotten. About three years ago I devised the same procedure, unaware at the time that Agnew had preceded me, and ever since have made use of it with increasing satisfaction.[2]

The methods of treating acute dacryocystitis most widely followed are undoubtedly those set forth by Fuchs in his text-book, viz:

> If the inflammation has passed the initial stage, it is idle to endeavor to prevent the formation of an abscess; besides, the methods of syringing, expression and compression, given above, could not be employed on account of the swelling and painfulness of the parts. The only thing to do now is to hasten the formation of the abscess, an object which is best attained by the use of moist and warm compresses. As soon as fluctuation makes itself apparent, we incise the anterior wall of the lacrimal sac, or that portion of skin beneath which the presence of pus can be made out. A lacrimal fistula is thus artificially produced, through which the contents of the abscess and of the lacrimal sac itself are discharged externally. This is kept open by the introduction of a strip of iodoform gauze every day, until all inflammatory symptoms have disappeared and the secretion that exudes has lost its purulent character.

It will be seen that this treatment is based on the assumption that a lacrimal abscess is analogous to any ordinary abscess. This, however, is not the case. In the earliest stage of an ordinary abscess a central cavity is lacking, owing to the fact that the purulent infiltration in the center has not become sufficiently dense to break down the tissue. While the abscess cavity is forming, a reaction is taking place around it, which walls it off and tends to prevent extension of the infection to the surrounding tissues. In the case of a lacrimal abscess, on the other hand, there is a preformed cavity which is already walled off from the surrounding parts by epithelium and connective tissue. As the inflammatory process increases, the cavity becomes more and more distended, and the infection penetrates the wall and forms one or more secondary abscesses in the tissues without, which ultimately open into the lacrimal sac and through the skin. From these considerations it is obvious that, while in the case of an ordinary abscess delay of operation may be advantageous, in the case of a lacrimal abscess it unnecessarily prolongs the process and increases the danger of extension to the surrounding tissues and of the formation of a fistula.

Admitting, then, that the usual temporizing methods in the treatment of acute dacryocystitis are improper, and that the pus should be evacuated as soon as possible, how should this be accomplished? In the very early stages an attempt may be made to press out or wash out the contents of the sac through the canaliculi, but this is seldom successful. This failing, the sac should not be incised through the skin under any circumstances. Objections to the skin incision are that owing to its depth it gives imperfect drainage, that it requires to be "wicked" or frequently reopened, and that it insures a fistula which too often is almost impossible to heal and which interferes with extirpation of the sac later. The Bowman operation of slitting the canaliculus is less objectionable, but it also does not give good drainage, involves unnecessary mutilation, and is difficult to do under the inflammatory conditions prevailing. Superior to either of these procedures is the incision of Agnew. This is made through the conjunctiva between the caruncle and inner commissure of the eyelids. It involves cutting through the least possible depth of tissue, and not only gives adequate drainage but insures constant irrigation of the lacrimal sac by the tears.

The following quotation gives Agnew's views on the treatment of acute dacryocystitis and the description of his incision:

> The common practice is to order leeches and hot poultices over the sac. This is a serious mistake. The first and imperative indication is to make an opening and let the contents out of the sac. . . . If the matter is already showing itself as a yellow or bloody mark beneath the cuticle, your course is simple; cut through the skin at the most depending part of the fluctuating tumor. . . . You have [otherwise] the choice of two other methods: either to slit up the lower canaliculus from punctum to sac and thus evacuate the matter; or, if that be prevented by excessive swelling, to make an incision behind the commissure of the eyelids between it and the caruncle, where you can reach the cavity of the sac with great ease, and do nothing to embarrass you in the after-treatment of the case. . . . You may then empty the sac without difficulty and avoid an external wound; nor does your procedure injure the canaliculi, or damage any appendage of the eye or interfere with after-treatment.

Agnew used a Beer's knife in making the incision. I found this unsatisfactory, because in giving it the desired direction, that is, directly inward toward the nose, the blade is almost sure to come in contact with the cornea and thus render the latter liable to infection. While planning a special instrument for this purpose, Dr. W. Liebman, my assistant in many of these operations, suggested the use of a small angular keratome, and this has proved perfectly satisfactory. General anesthesia with ether has been employed in all my cases. An assistant holds the lids apart with two small lid elevators. The angular keratome is then made to enter just in front of the caruncle, is plunged through the sac to the bone, and the incision enlarged by cutting upward and downward. There is always free hemorrhage, but pus does not always gush out until after a probe is introduced. I always immediately probe the lacrimal duct through the incision, using in adults first a No. 12 Theobald probe, then always a No. 14, and finally, if possible, a No. 16. The large probe is left in until the patient begins to regain consciousness, in order, as far as possible, to prevent bleeding from the duct.

For the after-treatment I direct the patient to press on the sac from time to time and keep the conjunctival sac free from pus with a lotion of boric acid. I have never irrigated the sac, even immediately after the operation, and my results show that this is unnecessary, the tears no doubt serving this purpose. Cold or hot

* From the Massachusetts Charitable Eye and Ear Infirmary.

1. Agnew, C. R.: Practical Suggestions for the Treatment of Lacrimal Disease, Am. Pract., January, 1871, p. 1.

2. For the reference to Agnew's paper I am indebted to Dr. J. E. Weeks, who in his text-book makes brief mention of Agnew's incision.

applications are also unnecessary. On alternate days following the operation the duct is probed through the incision, a probe one or two sizes smaller than the largest probe used at the operation being introduced. The probing is done under cocain anesthesia and is almost painless, owing to the ease with which the probe is passed. The probe is allowed to remain only momentarily. Without probing the incision quickly closes. The result of this treatment is always most gratifying. Improvement begins at once, and in most cases within a week to all external appearances the condition is practically normal.

Agnew does not state that he probed the lacrimal duct through the conjunctival incision either at the time of operation or later. I regard the probing, however, as important. At first I introduced the probe at the operation very cautiously, in the fear that traumatizing the duct might lead to extension of the infection. Experience has shown that this fear is groundless, and now I pass the probes more boldly, using if necessary a moderate amount of force. I have been surprised to find, however, how readily in almost all cases even the largest probes may be passed. It might be supposed that in such an inflammatory condition the duct would immediately close after each probing so that drainage would be prevented, but the ease with which the subsequent probings are performed proves that this is not the case.

In still another particular I have differed from Agnew in the use of his procedure. Agnew employed it only in certain cases. In cases, especially, in which the abscess seemed to be pointing externally, he made an incision only through the skin. On the contrary, I make the incision through the conjunctiva in all cases, even when the abscess has already opened itself through the skin. When, however, there is an abscess immediately beneath the skin, I always in addition make a small incision into it and evacuate the pus, but I am careful not to carry the skin incision into the lacrimal sac. In this way the subsequent formation of a lacrimal fistula is avoided. I have been surprised to find that in certain cases what appeared to be the lacrimal abscess pointing beneath the skin was in reality a separate secondary abscess which did not communicate with the sac.

When I first conceived this operation, it was my expectation that it would convert an acute into a chronic dacryocystitis, at the same time obviating a fistula, so that extirpation of the sac could then readily be done. Much to my surprise I have found that, as far as I could ascertain, in almost all cases the sac has given no further trouble. In only one case, in which the patient discontinued treatment after only two probings, did the patient later return with a mucocele. This was extirpated without difficulty. What the ultimate results have been in all the remaining cases, in each of which there were five or more probings, I cannot say, as many patients have not returned. In the few cases I have seen since, the canaliculi were patent, but no secretion could be expressed from the sacs. In each case, however, with the possible exception of one, the lacrimal duct had again become closed, so that I attribute the good result not to the reestablishing of normal conditions, but to shrinkage of the sac.

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In Cases of Obstinate Sores, Think of Syphilis.—Another point about extragenital chancres is that a sore place that does not get well under ordinary treatment ought to make you think of syphilis.—George Pernet in *Clin. Jour.*, London.

A CASE SHOWING RESTORATION OF THE ENTIRE NOSE BY RHINOPLASTY AND BONE TRANSPLANTATION *

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I am indebted to Dr. Frank E. Miller of this city for the following interesting case:

The patient, a woman aged 32, is married and has a child of 5 who is apparently in good health. She had a stillborn child six years ago.

There is no record of hereditary syphilis in her family, and in other respects her family history is unimportant.

The patient was a strong and healthy girl up to the time she was 16 years old. At this time she had a slight nasal catarrh for which she received treatment. While she was undergoing this treatment she developed a chancre in her nose. This was followed by secondary symptoms. Several months later the throat became sore, the nose swelled up and began to discharge pus, occasional pieces of bone and cartilage coming away. Antisyphilitic treatment was begun, but as it seemed to do no good was soon discontinued. The ulcerative process became much worse, resulting in the destruction of the entire nose within two years of the beginning of the disease. During the active stages of the infection she was exhibited at the New York Academy of Medicine as a case of syphilis of extraordinary malignancy.

The patient applied to me for treatment early in March, 1912. At this time she wore an artificial nose of celluloid, which she stuck on her face with shellac. This artifice succeeded only in making her appearance ludicrous.

Examination.—The nose was absent, there being only a hole in the face where this organ should be. Surrounding this hole was a thick ring of scar tissue, extending beyond the limits of the nasal area on the cheeks and on the upper lip, which was badly scarred and retracted. The hard palate and to a considerable extent the superior maxilla, corresponding to the incisor teeth, were destroyed. The septum and the entire contents of the nasal cavity had completely disappeared, and the walls of this large cavity were covered with the crusts of an extensive ozena.

The patient's general condition was only fair. Wassermann reaction faintly positive.

Operation and Result.—March 20, 1912, I resected 3 inches of the right ninth rib, split it and scraped away the cancellous tissue from the outer half. I transplanted this between the superficial and deep fasciae over the biceps of the left arm. There was little or no reaction following this operation, primary union was obtained, and at the end of ten days the bone seemed thoroughly incorporated into the tissues.

March 30th, I dissected up a flap about a third larger than would be needed to construct a nose. This flap included the bone-graft, and was made large in order to allow for the great amount of contraction which I knew would occur. The upper end of the flap was sutured into the proper position on the face, and the end of the bone-graft was placed under the periosteum over the nasofrontal process. The lower end of the flap remained attached to the arm, which was bound to the head by means of plaster strips and bandages. On the third day after this operation, epithelial skin-grafts were removed from the thigh and placed on the under surface of the flap. April 12 the union between the flap and the face seemed to be complete, so its connection with the arm was severed. The flap immediately became white and cold and later bluish. When this condition had persisted for several hours, I felt certain that the flap would die, so I resorted to an expedient which I believe preserved its vitality. I succeeded in getting a leech to attach itself near the distal end of the flap. The suction of the leech produced a strong flow of blood through the recently formed capillaries at the connection of the flap with the face, dilating them and secur-

* Case presented at New York Academy of Medicine, Oct. 23, 1912.

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Fig. 1.—Patient before operation, face view.

Fig. 3.—Patient after operation. Lip deformity is due to the disease.

Fig. 2.—Patient before operation, profile.

Fig. 4.—Profile of patient after operation.

ing a good blood-supply to the flap. The bleeding from the leech-bite continued for twenty-four hours after the worm had been removed. It is my belief that this expedient will often save flaps which would otherwise be lost from a lack of blood-supply, for in this case immediately after the application of the leech the flap became warm and of good color and remained so.

The molding and shaping of the flap into the nose as you see it has required several minor operations. There is an opening for nasal breathing, the appearance of the patient is greatly improved and she is well satisfied with the result. Much to my surprise she has sensation in her nose and she says that this is rapidly becoming more acute.

69 West Fiftieth Street.

RHINOPLASTY WITH FINGER

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The following procedures cover practically all conditions of external nasal deformities requiring the building up of the nose by the addition not only of bony structures but also of skin. The case reported represents the severest type, in which not only the soft parts, but also the bony structures are wanting and must be supplied. In such a case there are three measures which may be used:

1. A flap consisting of soft parts, periosteum and outer table of skull reflected down from the forehead. The resulting scarring of the forehead as well as the problematic, natural, final shape of the nose are the objections to this method.

2. The use of a finger to supply the deficiency of the nose. This an excellent method and has given splendid results. The only objection is the loss of the finger.

3. A rib may be transplanted into the forehead (Morestin) or into the arm (Carter), and when this has healed in place, then the soft parts containing the rib may be reflected as a flap and sutured in place. In such a procedure it would seem wisest to transplant a rib removed with periosteum covering half its surface. This rib is then split transversely and grafted into place in contact with the living frontal bone after separating its periosteum.

These measures would assure the life of the graft. The removal of half its periosteum would not militate against the reformation of the removed rib, since half its periosteum is left *in situ*.

That the rib will not be absorbed, the following conclusion by Murphy[1] indicates:

> Bone with or without periosteum transplanted in the same individual and contacted with other living osteogenetic bone at one or both of the ends of the transplanted fragment always becomes united to the living fragments and acts as a scaffolding for the reproduction of new bone of the same size and shape as the transplanted fragment, if asepsis is attained.

REPORT OF CASE

The patient, a man of 45, was admitted to the hospital Sept. 5, 1912. Two years prior he had been a stationary engine oiler. His right arm was caught in the belt and his face was drawn in so that the spokes of the wheel struck his face, annihilating his nose. He was then in a Long Island City Hospital for twelve months, where he said he had eleven operations. On admission to the Presbyterian Hospital, his face was entirely healed, but terribly disfigured, as the pictures show (Figs. 1 and 2). The face was marred by numerous scars, as was also the forehead, the skin of the forehead being attached to the bone by the scars. The projection of the nose was completely gone and the nasal and cartilaginous portions entirely missing, as was also the projection of the frontal bone forward. There was one small opening into the nasal cavity, admitting a probe. The left nostril was entirely gone, and its edge was attached to the bone beneath, while half of the right nostril remained and projected forward in a teat-like process. The defect in soft parts went up to within an inch of the frontal bone, and was 1 inch in transverse diameter and an inch and a half vertically. Any operation to reproduce the nose in such a case must introduce not only some bony support, but also a considerable amount of soft parts. Morestin has carried out a procedure of grafting a rib into the soft parts of the forehead and then turning down a flap, containing the implanted rib, to form the nose. This did not seem advisable because of the scars on the forehead, and the wish not to increase the patient's disfigurement by additional scars. It was considered best to graft a finger into the defect, because the man's condition was pitiable. He could get no position because of the deformity and went around with a handkerchief tied about his face to hide his disfigurement.

Fig. 1.—Patient before operation.

The procedure followed was a combination of the methods described by Finney and McGraw. The head and shoulders were immobilized in a plaster-of-Paris splint, the evening before the operation, and this splint was cut down on one side so that it could be quickly removed in the case of any accident during anesthesia. This splint was of great assistance in immobilizing the attached hand and arm immediately after the operation. A knife inserted in the defect separated the soft parts from the bone beneath, extending up to the frontal

1. Murphy, John B.: THE JOURNAL A. M. A., April 6, 1912, p. 989.

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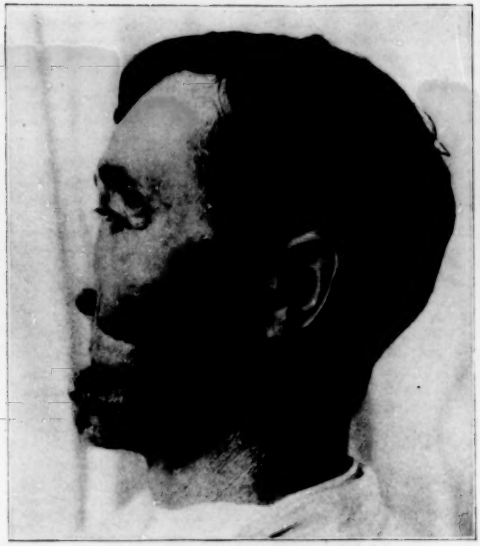

Fig. 2.—Profile of patient before operation.

Fig. 3.—First stage of operation; finger joined to frontal bone; plaster-of-Paris splint about head, arm and chest.

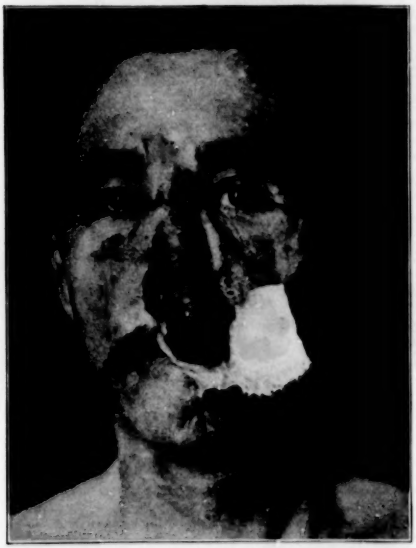

Fig. 4.—Second stage of operation, twenty-one days later; finger has been amputated.

Fig. 5.—Appearance of patient two months after operation.

bone, and the edges of the defect were pared all about the margins. The left ring-finger was chosen.

Esmarch about arm. Nail removed and scraped, exposing bone beneath. Metacarpophalangeal articulation opened by a posterior longitudinal incision. Posterior extensor tendon divided by transverse incision. Joint opened. Head of metacarpal bone removed. Division of anterior tendons, also lateral ligaments of joint. Finger was then free but united by soft parts and nourished by uninjured digital vessels. Skin removed from whole circumference of last phalanx, and tip of phalanx nipped off with rongeur. Finger then slipped into place, the extremity of the last phalanx going up to the frontal bone under a bridge of undivided soft parts.

No suture was used to attach the phalanx to the frontal bone. A longitudinal denudation was made on each side of the second phalanx, about one-fourth inch wide, to which the edge of the cheek on one side was sutured, and on the other that of the nostril, the defect between the cheek and nostril being filled in by the skin of back of finger. The first phalanx was left unattached, as it was later to be turned backward. Interrupted silkworm gut sutures were used.

Fig. 6.—Profile of patient two months after operation.

A plaster-of-Paris splint was then applied about head and about arm and chest (Fig. 3) For a couple of days after the operation the pain in the arm was severe, but after that, the arm went asleep, so to speak, and there was comparatively little discomfort.

On the fifteenth day after this operation, one of the digital vessels on one side of the finger was tied under novocain 4 per cent. anesthesia; on the twenty-first day, the finger was amputated through the metacarpophalangeal articulation, using novocain locally. No attempt was made to close the proximal end of finger at this time (Fig. 4). Heat in the shape of hot cloths was applied to the finger for twenty-four hours. Subsequently there was some necrosis of the soft parts on the end of the first phalanx, but not to any great extent.

Eight days later the first phalanx was flexed to a right angle relative to the second phalanx and its tip was sutured in this position to the bone behind, while the soft parts covering it were also turned backward and sewed to the freshened lower border of the nasal defect. Sixteen days later it was necessary to remove most of the first phalanx because of necrosis.

After this operation there was some infection of the finger, the pus from which escaped through several places in the line of the scars. This infection, however, soon ceased. The tendons of the transplanted finger were not disturbed at any time during the various procedures, and are still in place.

The man is not yet handsome, but his appearance is vastly improved. There is no sign now, after three months, of any regrowth of the nail. There is a small opening into the nasal cavity, but not sufficient for respiration. The patient has very little sense of smell. The wound caused by amputating the finger healed by primary union. The tip of the last phalanx seems to be solidly united to the frontal bone. Figures 5 and 6 represent the result after two months. Figure 7 is a skiagram indicating the position of the phalanges.

Fig. 7.—Skiagram indicating the position of the phalanges.

32 East Fifty-Third Street.

The Correct Rule of Medical Freedom.—The limit of "medical freedom" is a very plain and natural one. Let the patient take whatever kind of treatment he may wish, but let no treatment be administered by persons who have no knowledge of the fundamental facts of medical science. If the requirement of technical knowledge is fatal to any school of therapeutics, it is time that that particular form of robbery should be done away with. Taking chances with the lives of others for the money there is in it is not a profession to be encouraged.—David Starr Jordan, *Science*.

INTESTINAL OBSTRUCTION

A CLINICAL STUDY OF ONE HUNDRED AND EIGHTY-ONE CASES

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The deductions from the experimental work of Draper,[1] and of Whipple, Stone and Bernheim,[2] on the cause of death in acute intestinal obstruction are almost diametrically opposed to those of Hartwell and Hoguet[3] and are also very different from those of Murphy and Vincent.[4] Clinical experience, however, follows closely the results of Draper, Whipple and Stone. This close relation is well illustrated in Bloodgood's[5] cases of duodenal obstruction following the Billroth II gastrectomy.

All this experimental work concerning the cause of death is interesting, but the important problem for the surgeon is to apply the knowledge thus acquired to the curing of intestinal obstruction. Clinical study can never be so accurate as experimental work, because it is difficult, if not impossible, to determine at operation the completeness of the obstruction, or even its exact seat. Furthermore, the records of the operation are likely to be more definite in describing technical details than in describing the exact nature of the obstruction.

Clinical experience and experimental study agree that the duration of obstruction, its position and the character of the obstructing force are the important points in determining the severity of the symptoms and the time of the fatal result. It is universally agreed that the higher the obstruction, the more severe the symptoms and the more rapidly fatal the disease. Strangulation, or other interference with the circulation, increases the severity of the condition, at the same time adding to the probability of fatal outcome. It follows therefore that early recognition and prompt relief of the obstruction give the best opportunity for the cure.

The problem is to find the clinical picture which will enable us to recognize obstruction in its early curable stage, and to determine what extent of operation should be performed when the condition is complicated by the results of obstruction, namely, toxemia and gangrene.

In the hope of deciding these points I have analyzed the histories of 181 cases of intestinal obstruction from the records of the Johns Hopkins Hospital and of St. Agnes' Hospital. These cases include twenty-seven varieties of obstruction, exclusive of strangulated hernia, classified according to causation and operated on by fifteen surgeons over a period of twenty years. The personal equation is therefore eliminated, although all the operators followed the same general technic.

The course of an obstruction may be divided into three stages: (1) the stage of onset, when the symptoms are due to the arrest of the intestinal current; (2) the stage of compensation, when the gastro-intestinal organs attempt to overcome the obstruction or its results; (3) the stage of sequelae or complications, when the obstruction has caused secondary destructive changes in the bowel or in the body as an entirety. The higher and more complete the obstruction, the less clearly defined will be the symptoms of the different stages. In most cases there will be a merging of the symptoms of the various stages. Vascular injury always intensifies the course of the disease.[6]

SYMPTOMS OF ONSET

The characteristic symptoms of onset are pain, constipation or diarrhea, and vomiting. Abdominal pain, usually paroxysmal or described as "cramps," is the most constant initial symptom. Pain occurred early in all the cases. The pain of obstruction is not relieved by defecation or by vomiting. Opium brings temporary ease, but as the effect of the drug wears off the pain returns.

The association of pain and constipation at the onset occurred in 30 per cent. of the cases. Constipation may precede the pain (10 per cent.). It may come on after an initial bowel movement. The latter condition is frequently present in the cases of strangulated hernia and of intussusception. The constipation resists well-given enemas, or an effectual enema does not give relief from the pain.

Diarrhea and pain with blood and mucus in the stools occur in intussusception and with intestinal tumors.

Vomiting may be the initial symptom, followed by pain and constipation, but the usual sequence is pain, vomiting and constipation. The vomited material may be gastric or duodenal contents. As a rule, however, the material is progressively gastric, bilious and then intestinal. At the onset it is gastric, occurring without regard to the ingestion of food. Lavage does not relieve the symptoms, a distinction from the vomiting of acute dilatation of the stomach. The initial vomiting is reflex, from disturbance of the peritoneal and intestinal innervation. Later the vomiting is a mechanical attempt to rid the body of an overflowing amount of material in the gastro-intestinal tract.

Initial hiccough may replace the vomiting of onset and has the same significance.

Rare symptoms of onset are bloody or mucous stools preceding pain (two cases) and external tumor (three cases). In one of the latter cases the tumor was the projection of an intussusception through a colostomy. The other two were a prolapse of the rectum from straining, and an intussusception of the sigmoid projecting through the anus. Pain with an insatiable desire to defecate was present three times: (1) in the case of an internal hernia strangulating the ileocecal region, (2) a carcinoma of the colon and (3) a sigmoid volvulus.

The effect of lavage, effectual enemas and cathartics on the symptoms of onset was noted in forty-two cases. In twenty-five the remedy did not give relief. With this fact demonstrated, immediate operation was performed ten times with ten recoveries. When the operation was postponed until other symptoms developed, there were three recoveries and ten deaths. Five of the fatal cases had developed gangrene at the time of operation. Two patients in whose histories this fact was noted died before any operation could be performed.

Therefore I feel that whenever a patient suffering from abdominal pain alone, or pain with either vomiting or constipation, or both, is not permanently relieved by lavage or effectual enemas, immediate operation is indi-

1. Draper, John William: Experimental Intestinal Obstruction, THE JOURNAL, A. M. A., Oct. 21, 1911, p. 1338.
2. Whipple, Stone and Bernheim: Johns Hopkins Hosp. Bull., June, 1912, p. 159.
3. Hartwell and Hoguet: Am. Jour. Med. Sc., March, 1912, p. 357.
4. Murphy and Vincent: Boston Med. and Surg. Jour., Nov. 2, 1911, p. 684.
5. Bloodgood, Joseph C.: Dilatation of the Duodenum in Relation to Surgery of the Stomach and Colon, THE JOURNAL, A. M. A., July 13, 1912, p. 117.

6. These stages do not indicate periods of time. With a high strangulation the patient will reach the third stage in an hour or two, while one with a low obstipation may remain in the second stage for several days, or even weeks. After a diagnosis of intestinal obstruction is made the attending physician is never justified in allowing the patient to pass into a later stage before advising surgical intervention.

cated. A similar result following effectual purgatives also indicates operation, but purgatives should not be administered for the relief of these symptoms to the exclusion of the enema and lavage. If the latter remedies are effectual no purgative will be required. If these do not give relief, the purgative will do harm.

When the well-given enema or purgative is ineffectual, what is the proper procedure? This condition was noted forty-three times. In thirty-eight of these cases the patients were allowed to go on to the secondary stage or to that of complication before operation was performed. Four were operated on during the secondary period, two of whom died. Of thirty-three after complications had developed, eighteen died. One patient died of the complications without any operation.

Under these circumstances, with the patient in the hospital prepared for operation, we wash out the stomach and pour in from 50 to 75 c.c. of castor oil at the end of the lavage; at the same time giving the patient 1/32 grain eserin (physostigmin) salicylate hypodermically. In the presence of mechanical obstruction this treatment intensifies the primary symptoms and hastens the development of the secondary ones to such a degree that the diagnosis becomes easy.

We have noted this occurrence in five cases of postoperative obstruction included in the forty-three mentioned. All the patients were operated on as soon as the diagnosis was made. In all the obstruction was found and four recovered. The fatal case was an obstruction occurring three weeks after enterostomy for the paralyzed bowel of diffuse peritonitis from perforated typhoid ulcer.

SECONDARY SYMPTOMS

The symptoms of the second stage of obstruction are due (1) to the efforts of the intestine to force its contents beyond the point of closure (symptoms of compensation), (2) to the effect of these efforts on the size and shape of the bowel, and (3) to changes due to involvement of the blood-vessels in the mechanism of the obstruction. Whenever the obstructing force interferes with the circulation, the course of the disease becomes fulminating and the development of the complications more rapid.

Among the symptoms of compensation I shall first consider paroxysmal pain (colic), or increasing severity of the pain of the first stage. The cause of the pain in obstruction is mesenteric tugging due to the tonic contraction of the intestinal wall, going on to tetanic rigidity of a segment in which pressure is increased and unusual motor activity stimulated. Thus a vicious circle is established; the distention stimulates the peristalsis, which in turn, by sending more material into the obstructed area, increases the distention and pain, with later development of visible loops and peristalsis.

The pain of strangulation is slightly different from that of obstipation. The onset of strangulation is accompanied by peritoneal shock, and the pain is continuous with paroxysmal exacerbations. Anodynes do not give more than temporary relief in either variety. As toxemia and gangrene develop the pain diminishes or entirely disappears.

The vomiting of the initial stage of obstruction may be reflex from peritoneal shock, and when due to this cause consists of stomach or duodenal contents. The vomiting of the stage of compensation, according to Haquenot, is a running over of the contents of the filled intestine into the stomach. This vomitus consists of intestinal contents, often fecal. The vomited material is thin, usually yellow, green to brown, acrid and extremely disagreeable in taste and odor. The color seems to deepen with the duration of the obstruction, owing to putrefaction of the intestinal contents.

The quantity of intestinal material vomited may be extremely large. The quantity of fluid secreted by the intestine is markedly increased in obstruction. The action of cholin on the autonomic nerve influences governing intestinal secretion points to the possibility of this compound, or some allied substance, being the cause of all the symptoms of intestinal obstruction. It is known that neurin and muscarin, decomposition products of cholin, when injected into animals produce death with symptoms resembling those of paralytic ileus.

Vomiting as a secondary symptom was present in 100 cases, in which there were forty-three deaths. Fecal vomitus was noted in twenty-seven cases, of which eighteen were strangulated obstructions. Fifteen of the twenty-seven patients died.

Vomiting acts as compensation in two ways. 1. The removal of a quantity of intestinal contents relieves the general abdominal as well as the intra-intestinal pressure at the point of obstruction. In this way an opportunity is afforded for the spontaneous release of the bowel from an external obstruction. 2. The vomiting of intestinal contents removes a quantity of highly toxic material, thus delaying or avoiding the development of the stage of toxemia. Lavage has the same value in compensating for the effects of obstruction, and the greater one of being independent of the patient's reflexes. When the return flow from the lavage has become clear, and during its expulsion suddenly becomes discolored again by intestinal contents, regurgitation from the intestine is proved and the diagnosis of obstruction is therefore confirmed. Vomiting or lavage which does not relieve the distention indicates obstruction.

Visible peristalsis or visible stiffened intestinal coils are the most characteristic of the secondary symptoms, and constitute evidence of an endeavor on the part of the musculature to force the intestinal contents beyond the obstruction.

The stiffened coil is a distended area in which the contractions have reached the tetanic stage. Visible peristalsis is due to an extraordinary activity of the peristaltic movement of the bowel produced at this time in order to overcome the obstruction. These movements are vigorous and associated with the presence of the visible stiffened coil. When much of the small intestine is involved in this process, the spastic distended coils may show as a series of parallel ridges—the ladder pattern. These contractures are always associated with pain. Nothnagel states that the intensity of the accompanying pain is a measure of the motor activity of the obstructed bowel. Visible peristalsis without pain is a symptom of severe toxemia.

The distention of this stage is regional and limited to the loop of bowel involved in the obstruction. The later general distention is due to chemical disturbances.[7] Regional distention may show itself as an asymmetric swelling of the abdomen, or the distended loop may be palpable through the abdominal wall, rectum or vagina. This distended coil presents an area of increased resistance to palpation. These changes are due to (1) infiltration of the bowel wall, with accumulation of fluids, and (2) the development of gases in its interior. They are primarily due to disturbance of the blood-supply. Consequently, local distention or a palpable distended

7. Draper, John W.: Discussion to article by Bloodgood referred to in Footnote 5.

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coil (von Wahl's sign) is a symptom of strangulation rather than obstipation. In the latter form of obstruction, because the gases are absorbed as soon as they are formed, no accumulation takes place.

Distention was present in 100 cases: regional fifty-five, general forty-five.

Tympanites usually accompanied distention. Dulness in the flanks may be present when the colon is obstructed and greatly distended; as a rule, however, this sign indicates free fluid in the peritoneal cavity. Liver dulness may be diminished, pushed up or obliterated by great local or general distention. As a late symptom this may indicate perforation.

Local tenderness may be from a local peritonitis or may be the soreness which is common in muscle that has been spasmodically contracted for any considerable length of time. The local peritonitis marks the passage of infective or irritating material through the distended wall of the bowel. This is, therefore, a symptom of the beginning of the complications or sequelae to be considered in the next group. This symptom was noted but twenty-five times.

The blood-count in obstruction usually shows a marked leukocytosis. In sixty-two cases the average was 16,000; in but two was it below 5,000, and in seven others below 10,000. The highest was 46,000 in a case of sigmoid volvulus.

The blood-pressure falls with the onset of symptoms and becomes markedly lowered as toxemia develops.

As to the effect of enemas, lavage and purgatives on symptoms of the second stage: What has been said concerning purgatives in the first stage must be emphasized when speaking of their use in the second stage. No purgative should be given in the second stage of obstruction unless the patient is in a hospital prepared for immediate operation, should the purge prove ineffectual or intensify the symptoms. Leakage through distended bowel, actual rupture, gangrene and other serious complications or sequelae are likely to follow the violent reaction of strong purgatives.

When a well-given enema does not move the bowels, or when the movement from an enema does not relieve the symptoms, immediate operation is indicated. The latter was noted thirty-nine times in the history of the second stage. Immediate operation was performed on eighteen patients, all of whom recovered. A delayed operation was performed on twenty-one, eleven of whom died, three having gangrene at operation.

The diagnostic value of lavage has been noted in discussing the vomiting of this stage. Regurgitation of intestinal contents into the washed stomach was observed in six cases, all included in the before-mentioned statistics.

Ineffectiveness of enema or purgative was noted thirty-eight times. Four patients were immediately operated on, and two of these died, one from toxemia, the other of acute dilatation of the stomach. All the other patients when operated on showed some form of complication or sequel. Sixteen died and eighteen recovered.

SYMPTOMS OF THE THIRD STAGE

The conditions of the third stage are toxemia, gangrene, peritonitis and alteration of kidney function.

The symptoms of toxemia are increase in pulse and respiration rate, with falling blood-pressure, cyanosis with or without clammy skin, and great prostration. The mental condition varies from noisy delirium to unconsciousness. Often there is a subjective sense of well-being, contrasting greatly with the objective signs, fecal vomiting, or distended abdomen, in which violent peristaltic action is visible. The association of visible peristalsis with absence of pain is characteristic of a very severe toxemia. There were eighty-two cases of toxemia in this series; thirty of these patients recovered.

Gangrene is often an early complication, when strangulation is present. When associated with toxemia it is a late development, and is due to secondary vascular changes in the distended loop of bowel, or to a gradually developing and limited mesenteric thrombosis at the site of strangulation.

The development of gangrene is accompanied by collapse, and often sudden and severe increase of pain, although later the pain is diminished. As a result of leakage peritonitis ensues and with its spread comes movable dulness in the flanks and obliteration of liver dulness. Gangrene was present in twenty-five cases, fifteen of which were fatal.

The peritonitis may be (1) general, from rupture of a large area of gangrenous bowel, with extensive pouring out of intestinal contents; (2) general, the reaction to bacterial or toxic invasion through the altered wall of the intestine; (3) local, reaction to punctate extravasations from the obstructed coil; (4) diffuse, from extension of the last variety. The first two forms are uniformly fatal, most often before the symptoms of obstruction have passed the second stage. The local and diffuse varieties are likely to be complicated by the toxemia of obstruction, and therefore most often result fatally. Four such cases occurred in this series and but one patient recovered. This patient was operated on for internal hernia on the fifth day of obstruction, and a small area of peritonitis was found at the neck of the constriction.

Among urinary symptoms are diminution of the quantity of urine, and, in severe cases, actual anuria. Indol, skatol and other aromatic compounds are present. The occurrence of albumin and casts is an almost constant observation in the St. Agnes cases, twenty-five in number. Special care has been taken in this hospital to record the presence or absence of this condition of the urine, and this may account for our seemingly unique observation. The disappearance of casts after the obstruction has been relieved points to a causal relation. The casts seem to be present from the onset, and appear to be a measure of the toxemia. In all the fatal cases, large quantities of casts and albumin were present in the urine.

OPERATIVE TREATMENT

The form of operation required in any given case must depend on the nature of the obstruction, and on the presence or absence of complications. Thus we group the operations performed into three classes: (1) relief of the obstruction, (2) excision of the intestine, (3) removal of intestinal contents through a wound in the bowel.

Relief of the obstruction includes (1) the division of constricting bands; (2) the reduction of an internal hernia or an intussusception; (3) untwisting of a volvulus; (4) removal of a foreign body; (5) short-circuiting the intestinal current around the obstruction.

Excision of intestine includes (1) resection and anastomosis; (2) anastomosis and excision, the ends of the loop being left out or drained by a tube; (3) secondary excision of an extruded loop with or without primary anastomosis.

Operations by means of which the intestinal contents are removed through a wound of the bowel include (1) enterotomy, when the wound is closed at once; (2) primary enterostomy, when the bowel is opened at the original operation; (3) delayed enterostomy when the loop is sutured into the wound and opened after an interval; (4) secondary enterostomy, when the bowel is opened at a succeeding operation.

In order to judge the efficiency of any of these operations, it is necessary that the procedures be compared with regard to the stages of the disease at which the operation is performed. This is the only logical basis for study of the treatment of obstruction, and avoids the confusion of many classes as to (1) causation, (2) differences in position of the obstruction, (3) variations in the completeness of the occlusion. Each of the last-named factors alters the rapidity of development and the duration of the three stages of the disease. Consequently, a study of intestinal obstruction from the point of view of the symptomatology and treatment of these stages balances the relation of the various factors and makes the comparison of operative statistics possible.

Thirty-four patients were treated in the first stage; all recovered. Of these twelve were relieved of their symptoms by enemas and purgatives. The other twenty-two were operated on. In fifteen cases the obstruction was relieved, two by reduction of an ileocecal intussusception, one by reduction of a sigmoid intussusception, ten by division of bands, one by reduction of a hernia in Treitz' fossa, and one by the untwisting of a sigmoid volvulus.

Resection was performed in three cases, once for small-intestine intussusception caused by tumors, once for removal of a strangulated Meckel's diverticulum, and once for a recurrent sigmoid volvulus.

Simple enterostomy was done twice, in both cases as a delayed enterostomy following other abdominal operations: (1) a resection for cancer of the colon, (2) resection for adhesions.

Enterostomy with short-circuiting was done once, a case of small-intestine entanglement following an appendicitis peritonitis. Enterostomy and relief of the obstruction was done once, a postoperative acute angulation of the descending colon, following the removal of a postperitoneal tumor.

Relief of the obstruction therefore is the best operative procedure in cases treated in the first stage. When provision has been made for a delayed enterostomy, this is the best procedure in postoperative obstruction, probably because opening the previously brought-up loop gives no operative shock.

Sixty-five patients were operated on in the second stage. Fifty-five recovered and ten died. Of the recovered cases, eleven patients died as a result of a second operation, or some complication developing later than one week after the original operation.

The operations performed were as follows: relief of the obstruction, thirty cured, four fatal; resection nine, all cured; short-circuiting two, both patients cured; enterostomy and relief of the obstruction, eight cured, two fatal; enterostomy and resection, two cured; enterostomy and anastomosis, one cured; enterostomy and excision, two fatal; simple enterostomy, two cured, two fatal. One patient was relieved by an enema.

Gangrene was present in ten cases; two patients were treated by anastomosis and excision of the gangrenous area, and both died; eight patients recovered; six were resected, one had resection and enterostomy; one, anastomosis and extrusion

Relief of the obstruction, therefore, seems the best operation in the second stage, provided gangrene has not developed. Gangrene in this stage is always the result of strangulation; consequently the local necrosis may come on before the constitutional changes have reached the later stage.

In the presence of gangrene resection is the best operation provided the constitutional symptoms are not pronounced. In the latter event, enterostomy should be added to the resection, or if the condition of the patient is grave the loops may be brought out of the abdomen and packed off with gauze, with an enterostomy above the obstruction.

Of the eleven patients who died of later operations or complications, two died of bronchopneumonia, seventeen and twenty days after relief of the obstruction. Four died of peritonitis eight, eleven, twelve and fifteen days after the original operation; one died of embolism on the twelfth day, one died of general tuberculosis two months after delayed resection of gangrenous bowel, and one died of anuria three days after resection of entangled loops, eight weeks after the enterostomy. Two died on the seventeenth and twenty-first days, respectively; the cause of death cannot be ascertained.

Eighty-two patients were operated on in the third stage, of whom fifty-two died. Of those who recovered five died as the result of complications or after a second operation to remove the cause of obstruction.

Relief of the obstruction was done in 22 per cent. of the cures, 34 per cent. of the fatal cases; enterostomy and relief in 22 per cent. of the cures, 8.5 per cent. of the fatal; simple enterostomy in 45 per cent. of the cures, 32 per cent. of the fatal cases; enterostomy and resection in four cases, two of which resulted in cure and two in death; enterostomy and excision, one cured, seven fatal (15 per cent. of the fatal cases); resection was done in one fatal case and enterostomy and extrusion in two others. One patient was relieved by an enema, and five died without being operated on.

Gangrene was present in fifteen cases, two cured and thirteen fatal. In both the cured cases enterostomy and excision were done, the ends of the divided bowel being drained through a tube.

In the third stage enterostomy should be done either alone or in connection with the other procedures. In non-gangrenous cases enterostomy was done in 77 per cent. of the cured, and in but 41 per cent. of the fatal cases. However subtle may be the exact cause of death in intestinal obstruction, there can be no doubt that the accumulated material in the occluded bowel is extremely toxic and has a considerable influence on the production of toxemia. Therefore it is necessary that in the presence of the symptoms of toxemia, we provide an outlet for this accumulated material by making an opening into the bowel above the obstruction. Whether we shall do more depends on the general condition of the patient, but this removal of toxic material is our first duty, and if neglected robs the patient of about half of his chances for recovery.

114 West Franklin Street.

The Value of Sanitary Consciousness.—As the first step toward spiritual salvation is a recognition of one's sins, so the first step toward sanitary salvation is the recognition by the sick town or county of its sickness. It is characteristic of communities with death-rates far in excess of the average that they do not know that they are sick.—*Bull. North Carolina State Board of Health.*

V. 6
1913

ILLUMINATING-GAS POISONING *

MORRIS FISHBEIN, S.B., M.D.
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I. THE EFFECT OF FORMALDEHYD ON TESTS FOR CARBON MONOXID IN THE BLOOD

In an examination of the blood from the body of a man in which post-mortem showed evidences of poisoning with illuminating gas (especially a brilliant red color of the muscles and blood), the question arose whether formaldehyd, used in embalming the body four days previously, would in any way modify or inhibit the various reactions ordinarily used to demonstrate the presence of carbon monoxid hemoglobin. A careful study of the literature failed to reveal any previous note on this subject, which may well be one of practical interest, especially in cases of a medicolegal nature.

The following preparations were studied by the spectroscope and by means of various chemical tests, which will be discussed individually: (1) the blood of the body examined post mortem after formaldehyd embalming; (2) normal blood; (3) normal blood containing formaldehyd solution; (4) normal blood through which illuminating gas had bubbled for fifteen minutes; (5) normal blood plus formaldehyd solution through which illuminating gas had bubbled for fifteen minutes, and (6) blood from several unembalmed bodies of persons whose deaths were suspected to be caused by poisoning with illuminating gas.

The test suggested by Hoppe-Seyler, namely, boiling the blood, which, if rich in carbon monoxid, yields a brick-red mass, while normal blood becomes brown-black in color, was found to be practicable in most instances. Not sufficient formaldehyd was present in the embalmed body to inhibit the test in any way. In the specimen of normal blood containing formaldehyd, and in that containing illuminating gas and formaldehyd, the blood did not coagulate readily, but boiled as a fluid. After cooling, the normal blood containing formaldehyd appeared as a brown-black fluid, and the normal blood with gas and formaldehyd appeared as a bright red fluid. After several days a thick coagulum settles out and the color distinctions are lost. If suspected specimens are quite old and appear dark and clotted, it is advisable before making the test to dilute them with water so as to make them compare more closely with specimens of normal blood.

In a test suggested by Rubner, four or five volumes of lead acetate solution are added to one volume of carbon monoxid blood and thoroughly shaken for about a minute. Such blood retains its red color; normal blood under similar conditions becomes dark red. This test for immediate use is not so good as the first mentioned. In twenty-four hours, however, the reaction is marked and it increases daily, being visible after several weeks. In the presence of formaldehyd a whitish coagulum forms in the blood in all cases, and the test is not valuable in the presence of much formaldehyd; but with small quantities the differences are more marked.

Blood diluted 1 part to 4 with water and shaken with three times its volume of a 1 per cent. tannic acid solution becomes in twenty-four hours gray when normal, but in the presence of carbon monoxid, carmin red (Wetzel). In this case a precipitate resulted in all specimens, those containing formaldehyd giving a thicker coagulum. This, however, does not in any way interfere with the test. The reaction seems quite a good one in comparison with the others. The results are marked and the color distinctions very easy. The differences persist and become more marked with increasing time.

Another method suggested by Wetzel is as follows: When 10 c.c. of blood are mixed with 15 c.c. of 20 per cent. potassium ferrocyanid solution and 2 c.c. of moderately strong acetic acid (1 volume glacial acetic acid to 2 volumes of water) a solid coagulum gradually results, in normal blood black-brown, but when the blood contains carbon monoxid, bright red. With the quantities suggested, large amounts of material are required, and the tests must be made in large test-tubes or small beakers. The test may also be carried out with relatively smaller quantities. In several instances in which it was employed, however, the results compared very unfavorably with other tests. All formaldehyd-containing mixtures formed very thick coagulums as compared with those containing no formaldehyd. The color distinctions are difficult, and in the various cases which were examined very few bright red coagulums were observed. In most cases the coagulum was light green or purple-black, the color seeming to depend more than anything else on the age and viscosity of the specimen tested.

A modification of this test has been made by Schultz and used in many instances by Wachholz and Sieradzki.[1] In two flasks are placed 2 c.c. of the blood diluted with 8 c.c. of water. To these are added 20 drops of a freshly prepared solution of 10 per cent. potassium ferrocyanid. One tube is shaken once and set aside. The other is shaken repeatedly. After ten minutes from 3 to 5 drops of strong sulphuric acid are added, and following this, 10 c.c. of concentrated tannic acid. In the first tube there will be a red precipitate, in the second a brownish-green. By this method Otto was able to show carbon monoxid in a mummified body eighteen months after death. Here also I found the color distinctions very difficult. The fact that colored solutions are employed in making the test makes it difficult to distinguish variations in the shades of the sediments produced. As in other instances, specimens containing formaldehyd gave thicker, lighter coagulums.

The presence of formaldehyd affects most of all a test suggested by Salkowski which has heretofore received favorable comment as an aid to the recognition of illuminating-gas poisoning. When blood is added to dilute hydrogen sulphid water drop by drop, it produces a bright red precipitate when carbon monoxid is present, otherwise a bright green. It was found that the addition of formaldehyd to normal blood before carrying out the test caused a red precipitate on addition to hydrogen sulphid water which was but a little lighter than that produced by carbon monoxid blood. If no formaldehyd solution is present the test gives easily distinguishable color reactions. But the fact that the presence of formaldehyd causes a normal blood specimen to give a color reaction which is not distinguishable from that of blood containing illuminating gas makes the test of little value in embalmed bodies.

The following quotation from an article by Doremus[2] gives in brief the salient points regarding the examination of carbon monoxid blood by means of the spectroscope:

* This work has been done under the alumni fellowship of Rush Medical College.

1. Kobert: Lehrbuch der Intoxikationen, 1906, p. 882.
2. Peterson and Haines: Legal Medicine and Toxicology, 1904, ii, 658.

Blood taken from persons or animals poisoned with carbon monoxid shows a characteristic absorption spectrum closely resembling that of oxyhemoglobin. The absorption occurs between the D and E lines chiefly, and is apparent through the appearance of two absorption bands of nearly equal intensity and width. The one near D coincides almost exactly with that of oxyhemoglobin of the same position; the space between it and the band toward F is considerably wider than that between the two bands of oxyhemoglobin spectrum. When more than 27 per cent. of the blood-coloring matter has been saturated by carbon monoxid, the addition to the blood of reducing agents, as a drop or two of a solution of crystallized ammonium sulphid, does not convert the spectrum into one of reduced hemoglobin. The character of this spectrum is that of a single band beginning on the D line and occupying a little more than half the space to the E line.

Dilution of the blood is advisable in order that a clear spectrum may be observed. Whenever carbon monoxid is present, the spectrum may be observed after a little practice, the presence of small amounts of formaldehyd having no inhibiting effect. Formaldehyd in larger quantities acts as a reducing substance, and when the quantity of carbon monoxid gas present is not larger than the percentage given above, the spectrum of reduced hemoglobin may be found. In the case of normal blood, various quantities of formaldehyd produce the various spectrums of oxyhemoglobin, some of which are distinguishable only with great difficulty from the spectrum of carbon monoxid gas blood, until sufficient formaldehyd is added, when the spectrum of reduced hemoglobin is produced. The addition of stronger reducing agents, such as mentioned by Doremus, produces the spectrum of reduced hemoglobin at once.

In view of the fact that formaldehyd was found to modify more or less completely all the chemical tests, and to act as a reducing agent when present in large amounts, so as to interfere also with spectroscopic examinations, it was thought best to make a brief report of these examinations. From my experience with the various tests under these conditions, it would seem that the first test suggested by Wetzel, namely, dilution of the blood 1 part to 4 with water and shaking with three times the volume of 1 per cent. tannic acid, whereby normal blood becomes gray and carbon monoxid blood remains red, is most reliable and trustworthy in the presence of formaldehyd. In case no formaldehyd is present, Rubner's test, the addition of 4 volumes of lead acetate, will be found to yield very satisfactory results. Spectroscopic observations are of little value unless preceded by many observations on the various forms of hemoglobin.

II. PERSISTENCE OF CARBON MONOXID IN THE BLOOD FOR FIVE DAYS

Of unusual interest are the conditions in the following instances of gas poisoning:

The patient, subjected for several hours after exposure to the action of the pulmotor, which has seemed to be of great efficiency in many cases, remained comatose. On admission to the Cook County Hospital, 12 ounces of blood were withdrawn and intravenous transfusion of saline solution was made. During four days normal saline solution by the drop method was given per rectum practically continuously. The patient remained unconscious throughout. The condition gradually grew worse and he died, nearly five days after the exposure to the gas. The following are the salient points in the post-mortem examination which was performed by Dr. E. R. LeCount:

This is the body of a colored adult 163 cm. (5 feet 4 1/6 inches) long and weighing approximately 125 pounds, about 22 years old. The skin in the axillary regions is white but elsewhere it has a peculiar brown color as in Addison's disease. The skeletal muscles are very dark red. The blood in a glass pipet looked at through the sunlight has the color and appearance of turbid claret.

Anatomic Diagnosis.—Hemorrhage into the lungs and visceral pleura, subpleural emphysema of the right lung (following the use of pulmotor?), engorgement of the pial vessels, edema and petechial hemorrhages in the lining of the small bowel, petechial hemorrhages in the lining of the greater antrum of the stomach and into the lining of the duodenum distal to the ampulla of Vater, hyperemia of the kidneys, small hemorrhages and slight edema of the lining of the base of the bladder, slight fatty changes and cloudy swelling of the liver, marked cloudy swelling of the pancreas, hyperplasia of the mesenteric lymph-nodes, fatty changes in the intima of the aorta, absence of union of the two branches of the posterior coronary artery, slight fenestration of the pulmonary valves and of the thebesian valve, fibrous patches of thickening in the anterior mitral leaflet, fibrous adhesions between the hepatic flexure of the colon and the under surface of the right lobe of the liver and between the anterior surface of the right kidney and the same surface of the liver, distention of the seminal vesicles, scars on the chest over the sternum.

Carbon monoxid was demonstrable in the blood by the various tests, chemical and spectroscopic. This is of special interest in view of the fact that many authorities hold that carbon monoxid blood loses its characteristics when exposed to the air, whereas in this case it was found even though the person lived five days after removal from the gas. Ordinarily if the patient lives, the carbon monoxid is eliminated within a few hours. Kobert mentions the report by Wachholz of carbon monoxid in the blood seven days after the exposure to the gas. Few such cases are reported; probably a further study would show many instances of this nature.

I desire to acknowledge my appreciation of the valuable advice rendered me by Prof. Walter S. Haines in the study of these reactions and of the kindly interest shown by Coroner Hoffmann in this work.

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DISPENSARY ABUSE AND ITS ELIMINATION BY ORGANIZATION AND THE APPLICATION OF SOCIOLOGIC METHODS

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There is to-day to a greater or less extent in all of our larger cities discussion of the problem of dispensary abuse. This problem has many sides, and dispensary physicians, outside physicians, dispensary managers and the patients are each and all in turn the abused and the abusers of the others in many ways.

Beyond the individuals involved there are four fundamental factors: (1) the medical needs of our ambulatory poor; (2) the response to this by benevolence through free dispensaries; (3) the demand for material for the teaching clinics, and (4) the hereditary privileges of the family physician. It must be admitted that this need of the poor for medical aid, this zeal of benevolence to give, the attraction to the teacher combined with the absolute necessity for clinics, and the demands of the general practitioners for this same material have not been brought into a working harmony. We must admit also that in this strife some of these poor, whom all

aim to help, suffer needlessly and others are led by excessive aid into habits of dependence and pauperism. The fact that there is no corresponding problem with the bedridden poor and that no such persistent and wide-spread criticism of our hospitals has come from physicians, sociologists or others, is significant. There must be something wrong with the organization of the dispensaries; the efficiency of the machinery is not satisfactory.

We must admit not only that dispensary organization has in general failed to give satisfactory or efficient results, but also that there has been no good cause for this failure. Consider again the four factors involved. They will work in harmony more easily than in discord. Benevolence stands ready to provide dispensaries with buildings and equipment in the name of charity. Our medical colleges through the attractiveness of teaching positions have manned these dispensaries with high-grade men that they may dispense the best of medical advice and aid—advice and aid deemed by the patients worth the time, annoyance and publicity of the teaching clinics. The outside medical profession is ready to undertake the care of any patient in possible danger of being pauperized by too much free treatment. Each of the factors therefore can be used to aid all that is worthy in the others, as well as to check unbalanced or unwise activity on the part of any.

(The medical profession mentioned or considered in this paper does not include charlatans with diplomas or without, physicians dishonest in diagnosis or treatment, or those licensed parasites drawing too much support from the profession and too much sustenance from the people—in other words those physicians who without examination of the patient hand out tonic or pills and call "next"; or those physicians devoid of professional character or characteristics who manage to extract the last dollar, and then leave the patient to obtain further treatment wherever he can. These classes, or better this class, for they are one, are, indeed, well known to dispensaries. They are but camp-followers to the profession, counting for nothing in the work and meriting no consideration.)

Better organization and harmony must surely come, for dispensaries are well worthy of a position equal to that of hospitals. Why not? An infected hand pains as sharply as an infected foot. There is equal danger to life; and the family in either case suffers equally: a man cannot work with either. But the one is a dispensary patient, because he does not absolutely need a hospital bed; the other a hospital patient because he cannot come to the dispensary. The trend of medicine toward the prophylactic will necessarily bring the dispensaries into a position of greater importance. The dispensary visit is the first symptom of an invasion into the patient's sociologic family by some disease, physical or social, capable of doing damage. Action then is more efficient and timely than later when this patient has reached the hospital stage. It is surely as good charity to keep a man out of a hospital bed as to care for him after he is in it. Who is there, except the confirmed malingerer, who would not regard it as even a greater service?

The usefulness of dispensaries as a form of organized medical charity in themselves and as hospital adjuncts, and the value of these outpatients to medical education must be considered as established. The great possibilities of such institutions in the development of prophylactic and community medicine are just beginning to be recognized. But on the other hand one cannot commend the organization and efficiency of the majority of our existing general dispensaries. Those able to pay have been admitted too often for treatment. Too many physicians have used their appointments purely for personal gain of various sorts, disregarding all opportunities for service to humanity or to the community. In too many institutions the greed for clinical material has stifled consideration for fellow-practitioner or for the people themselves. In such clinics the patients are but grist for a mill that throws all but pathology out with the chaff. In the unfortunate men, women and children who come to our clinics there surely must be something besides pathology that charity, sociology or public health will find worth the working, even as a by-product, that the gain to society may be the greater. The just protests of the medical profession in active practice against the pauperizing of the people, against the cheapening of medical services and against the invasion into their paying clientele has too often been met with sharp retorts only. Dispensaries must do more good and less harm and soon acquire greater efficiency, or the forces behind modern sociology, scientific benevolence and the agencies working in the interests of public health, will devise and develop a substitute.

Preliminary to all other reforms, dispensaries must recognize the established principle of our better hospitals, that the medical treatment and the sociologic management of patients must be completely separated. The medical staff of dispensaries must have undivided authority to prescribe the medical treatment for the patients placed in their care, but there should be an executive or sociologic chief and assistants in every dispensary having unquestioned authority in all matters pertaining to admissions, and direct control of the efforts to better the social condition of the patient, of his family and of the community. It is true that the executive or sociologic staff of hospitals has not as a whole been so progressive or so thorough as the medical, and there has come in this country the social service movement as a rebuke to our medical institutions for the narrowness of their service and the meagerness of the sociologic effort; but the principle has been established.

By the organization of this executive or sociologic staff having control of admissions and all but medical treatment, a dispensary can through it stop the treatment of those able to pay, end all the evils of the grasping clinic and effectively check exploitation of the dispensary by any physician for personal gain other than that which comes to him through the larger experience. In the dispensaries which have already adopted this principle the standard of the medical staff has gone up never down. Systematic management and greater kindness to the people have resulted in more return visits and established a confidence that brings better professional control. In such a dispensary the wide-awake clerks and other employees will catch something of the spirit of the trained social worker. In the daily crowds there will be less of the "exasperating foreign stupidity" and fewer of those answers of which the listener understands nothing but the angry or impatient tone, something which is common to all tongues. By the development of this sociologic staff under an executive head, there can come wiser admissions and less pauperizing, justice to the outside general practitioner, and justice and kindness to the patients refused or admitted. In other words, the problem of the so-called "dispensary abuse" can be solved. There can eventually come a practice in the science of sociology, a means of carrying prophylactic medicine to the people, an efficient factor

in the control of public health and aid to our fellow man through ideal social service; but the discussion of these is outside the scope of this paper.

With the assumption of responsibility there comes to an executive or sociologic manager the problem of these clearly defined, well-understood and just complaints from at least two sources. Both practitioner and social worker have complained about the admission of those who could pay for what they ask to have given them, and social workers have complained over the results of certain refusals. It is the admission and the refusal to admit that have made the trouble, and it is at the admitting desk that the problems must be solved. Institutions have not generally recognized, or at least have not assumed the responsibility for the far-reaching effects of the careless, haphazard work of an admitting officer, and have not taken the necessary action to make this work efficient, just or anything short of a farce. The result is that in every large city of the country the medical profession is discussing dispensary abuse and dispensary methods. To provide a clerk who records name, address, etc., and routinely asks each applicant if he is unable to pay a physician is scarcely better than the old way of allowing the patients to present themselves directly to the physician. It is merely an inefficient beginning. The executive sociologic head of a dispensary and his staff of assistants should be given final authority to decide each application on its merits, and then he can be held responsible for the results.

The next step is to secure better data on which judgment in deciding applications must be based. To this end there have been many suggestions. It is my belief that routine home investigation of every family is not only difficult but also unnecessary. An admitting officer who is in any way competent to hold such a position must read humanity well enough and have sufficient social training to decide on most of the applications promptly. He must have time to obtain the necessary sociologic facts, however. Not over fifteen cases per hour can be handled by one officer. There will be some who are not frankly in one class or another or who seem to be concealing the truth. This must be investigated in the homes. There is no other way. All the possible combinations of human misfortunes and human deficiencies come before the admitting officers. To do justice to them all would require the infinite. No finite judgment can decide all right, but it is incumbent on an institution to bring these people before the best social workers obtainable, workers capable of discerning between fraud and real need and capable of finding out quickly and accurately the real reason why each is an applicant. Not all come because they need medical treatment for which they cannot pay. A loss of faith in the physician then treating them brings more of the doubtful cases than the possibility of avoiding physicians' fees. The European peasant accustomed to the thoroughness of university clinics in the old country has no faith in treatment based on casual inspection. It is to the disgrace of the medical profession that this is the real reason that so many come to our clinics. They made one visit to a physician of their neighborhood and found him wanting. Ignorance of medical ethics and of the purpose of dispensaries, and unreasonable ideas of a physician's powers to cure, each bring their share. The real reason for coming varies with each applicant, and no application can be judged intelligently until this real reason for coming is clear.

In order to reduce still farther the dispensary abuse I offer the following system of graded admissions and graded refusals. It was devised to help every one secure all the medical care needed and to compel every one to pay private physicians for as much of this care as is possible without hardship.

ADMISSIONS

Class A. General admission for treatment in any department until revoked. This class is for those who never in reasonable probability will be able to pay any physician anything.

Class B. Admissions to any department for this sickness only, another sickness requiring another interview with the admitting officer. This class is for those who might under favorable circumstances pay for some medical care, but at the time of admission can pay nothing.

Class C. Admissions for major or special surgery or for any chronic condition for which these people cannot reasonably be expected to pay the ordinary fees for the treatment necessary. These patients are referred to general practitioners for short illnesses of any kind or for minor surgery, and can properly be required to pay for these services.

Class D. Admissions for special examination or consultation only; no treatment given. Many persons who employ or should employ, as the case may be, a general practitioner are not able to pay for *x*-ray examination, Wassermann reactions, vaccines, etc., or for the round of consultation necessary to work out an obscure case in the same thorough way that this physician would work out the case of a patient able to pay all. Medical charity in some form must aid or the patient receive insufficient attention, and the physician through necessity drift into careless work. Dispensaries should stand ready to help this physician and this patient, but to take the entire care of this case is often no real help to either. At the request of this physician the dispensary should make special examination or see in consultation this patient, and then refer him back to this physician for treatment. The outside physician should invariably be treated squarely. The patient has served as interesting clinical material, which is sufficient return to the dispensary. He is paying all he can to the medical profession, and the position of examination without treatment in the minds of these persons is such that they are not by this pauperized. Those admitted to this class are to be investigated as carefully to determine that they are not able to pay for their special examination as the other classes to determine that they are not able to pay for treatment.

Many applicants to dispensaries have been in the care of physicians. They have come because they are not recovering rapidly or because a friend recommends the institution. A clinical consultation in cooperation with this physician reassures the patient, is just to the practitioner and is not open to the criticism of pauperizing. The application of that first principle of medical ethics, which is better known as the Golden Rule, can easily be explained and the applicant given a printed form to take to his physician, which explains the situation and suggests that such a consultation may assist. The report to the physician of the findings in the examination or consultation is, of course, an absolute essential. This same form may be given to applicants without a physician but able to pay a small fee, explaining to them that the dispensary will see them in consultation with a physician only and that they must first arrange with some physician for any possible treatment. These came because of greater faith in the dispensary than in any

available physician. This is an undesirable condition, and it is clearly the duty of the dispensary to inspire in this applicant confidence in some member of the practicing profession available to him. To this end suggestions may be made and, if asked, the names and addresses of suitable physicians should be given.

The duty of a dispensary when it receives the application from a patient of a physician practicing any form of quackery is to my mind clear. By their acts these physicians have placed themselves outside of the profession: only the interests of the patient and of society are left to consider, and it is best for both these that all persons be served by honest physicians.

REFUSALS

An application, proper or improper, is always an expression of confidence in the institution. It is therefore clearly the duty of the institution to be courteous and to help the applicant to obtain what he needs in a proper way from proper resources. The curt dismissal of an applicant who hesitates to state that he cannot pay a physician may be as harmful to both this patient and to some physician as would be the admission. It takes but a moment to find out the real reason why each came. The institution has the opportunity to help the patient to secure relief, to help the medical profession by restoring this man to confidence in some physician, to keep him from self-medication and patent preparations, and to help society by keeping one more out of the dependent class. A refusal to admit is too often a rebuff to one who has come because he did not know what else to do or whom to trust. He may then have a few dollars, but without this advice in his blind search for a cure he may not spend them wisely, and later some charity finds him in want. It is then easy to see the opportunity for constructive sociology that was lost, and to complain. The mental attitude of the patient who has lost his trust in the physician of his choice varies from the defensive to the desperate. He knows that the "M.D., Physician and Surgeon" on a sign may stand for much or for little, and may hesitate to risk time and money. If mildly on the defensive, he is liable to turn to "patent medicines" until confidence in some physician is restored. If more worried, he may turn either to an advertised medical institute or to the best-known institution of the city to be treated as an outpatient and, though he may apply at the front office, this leads him to the dispensary. He does not understand why a hospital that treated him for an infected foot last year cannot treat him for an infected hand now.

Experience has led us to use four kinds of refusals:

1. A straight refusal and reference back to the former physician, if an honest one, when there is no good reason for coming even for advice.

2. Applicants who have no regular physician, but who are able to pay one, are given a letter to a physician whom we recommend, and who by location or language seems best fitted to care for this patient.

3. Treatment refused but consultation (Class D) offered, if the family physician wishes it. These applicants are given printed forms to take to their physician for endorsement.

4. There are many applications for some special treatment, as tonsillectomy or refraction, by persons who know that they need the services of a specialist, and yet feel that they cannot afford the fee of such a specialist. School inspection has greatly increased the number of this class. Investigation shows that many of these are really able to pay a small fee for a tonsillectomy, and we have little difficulty in convincing them that they should pay a certain specified amount. A letter is given them to the proper specialist asking him to care for the bearer, who will pay the sum agreed on for such services. Good specialists are perfectly willing to do this as long as the price is just, regardless of the fact that it is less than their usual fee. But the fact that makes this trouble worth the while is that these people really go to the specialists and have the needed work done. We found that oral references and recommendations to specialists without letters were almost useless. Not one in twenty went. They feared either a refusal or a price that would be hardship. With a letter nearly all go.

WORKING OF THE SYSTEM

All of the above classes of admissions and refusals (except Class D) have been in constant use in the dispensary of Lakeside Hospital and Western Reserve University for a year. Class D was planned with the others, but eight months were used in watching the applications to be sure of its reception and usefulness before actually putting it into effect. The results have more than justified the work of the more careful investigating and consideration of each case. The exclusions under Classes C and D and more frequent referring to outside physicians must necessarily reduce the number of dispensary treatments in the community, but the kinder treatment has made friends and our attendance has increased. Complaints from inside and from outside physicians have become few instead of many, and from both sources they have acquired a spirit of cooperation instead of protest. The physicians working in the dispensary have been more contented and satisfied, and have treated the patients in a kinder way and with more consideration. The better treatment of the patients has made them more appreciative, and nominal prices for medicines and supplies have been paid more often and more cheerfully. There has been even a cash return.

SUMMARY

1. The problem of dispensary abuse exists and must be solved.

2. The first step in the solution must be the creation in every dispensary of an executive head having sociologic training and interests. To this head and his assistants must be given final authority to decide admissions, and full control of all the functions of the dispensary excepting the medical treatment of the patients admitted. This executive staff will also develop the opportunities for preventive medicine and general social service.

3. A system of classified or graded admissions and graded or modified refusals will assist in the practical work of meeting the problem.

4. Such a system has been used in one dispensary for a year with satisfactory and pleasing results. It seems to be accomplishing much good, and no objectionable features have appeared.

Cancer and Worry.—One often has occasion to observe the bad effects of mental worry in these patients. Time and again when I find a patient not so well, with more pain or weaker, I learn that there has been some home worry that has caused it—a husband or child ill, or not behaving well, or children uncared for, or the little home broken up, or the sudden cessation of accustomed correspondence. The influence of mind on matter is seen with quite special force and clearness in cases of advanced cancer.—Alfred Pearce Gould in the *Lancet*, London.

A SUGGESTION ON PHENOL AND ICHTHYOL IN EXTERNAL OTITIS

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In the last years of my service at the head of the Eye and Ear Clinic, Colon Hospital, Cristobal, Canal Zone, we were trying both phenolized glycerin and ichthyol in glycerin in certain external and middle-ear diseases and comparing the results obtained, when unexpectedly the supply of fine gauze packing for making tampons ran out. I took some packing from the bottle of 10 per cent. phenolized glycerin, and, squeezing it partly dry, dropped 10 per cent. ichthyol in glycerin on it, and used it in a case which had resisted all previous treatment. The packing was removed in two hours. To my astonishment the tumefaction of the canal was very greatly lessened. I continued the hot 2 per cent. boric irrigations four times a day, with the addition of this tampon left in place two hours daily. The rapidity of improvement was wonderful and recovery complete. Thinking it possibly a coincidence that improvement came about at just this time, I tried the same method in a series of cases during the year ending July, 1912. An eye, ear, nose and throat out-clinic ranging during that time from 1,000 to 1,200 a month, exclusive of the hospital ward patients, gave a more or less adequate opportunity for a thorough trial of this method of treatment.

A mixture containing 5 per cent. each phenol and ichthyol in glycerin was found remarkably efficacious in otitis externa diffusa, myringitis, otitis externa circumscripta ("furuncle of canal"), and in connection with other treatment as good as any ear-drops in acute otitis media; and especially good in otitis externa caused by and complicating chronic suppurative otitis media. One of the greatest nightmares to the conscientious and conservative otologist is this last class of patients, especially those whose hearing is found by careful tests to be still so good that one hesitates to advise radical operative measures, and yet on whom all the methods commonly employed, including the so-called alcohol or dry treatments, have failed completely. I do not wish to be understood as recommending this method to the exclusion of all other methods of treatment, but as a remedy that in my hands has proved a valuable addition to existing methods, and particularly valuable where such methods have been carefully tried and have failed to give relief.

I can find no record of a mixture of phenol and ichthyol in glycerin being used for ear, or any other, disease.

807 Empire Life Building.

TWO CASES OF TONSILLECTOMY

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The following cases are reported from the medical service of Dr. George M. Swift and the surgical service of Dr. Frank S. Mathews at St. Mary's Free Hospital for Children:

CASE 1.—Miss C., aged 20, a nurse in the hospital, acquired a throat infection Oct. 5, 1912. The pharynx and tonsils were much inflamed and there was a small white plug about 2 mm. in diameter in a crypt of the left tonsil. There was no diphtheritic membrane. The temperature was never above 100.5 F., except after antitoxin, when it reached 101. The patient was not very ill at any time and remained in bed only four or five days. A throat culture taken October 6, grew diphtheria bacilli. Two doses of antitoxin were given in the first two weeks. Hexamethylenamin (urotropin) and the usual antiseptic gargles and applications were used. The inflammation disappeared in ten or twelve days and the throat appeared normal, but the cultures remained positive. Between October 5 and November 16 twelve cultures were taken from the tonsils and pharynx and all grew diphtheria bacilli. The organism was isolated and found virulent by inoculating a guinea-pig.

Nov. 16, 1912, Dr. Mathews removed the tonsils by the finger-enucleation method. They were not large but had relatively deep crypts, with no foci of pus or cheesy material. Six days later cultures from the tonsillar fossae and pharynx were negative for diphtheria bacilli. Healing was rapid without any complications. Cultures taken two and four weeks after operation were also negative.

CASE 2.—A. O., boy aged 3 years, was admitted to the hospital Sept. 15, 1909. The family and past histories were negative. Two months before admission the parents noticed that the child's abdomen began to increase in size. This slowly increased for the next seven weeks. Ten days before admission the neck became swollen. Then it was noticed that the ankles, legs and thighs were swollen. There was no history of shortness of breath, headaches, vomiting, loss of appetite, disturbance of vision or disturbance of urination. At the time of admission the positive physical findings were general anasarca with liquid in the pleural and peritoneal cavities, and hypertrophied adenoids and tonsils. The urine contained a heavy cloud of albumin and many hyaline and granular casts.

The edema and transudation increased during the next three weeks, and the right pleural and peritoneal cavities were tapped. For the next five and one-half months the serous cavities were never free from liquid. The edema disappeared under restricted liquids, hot packs and diuretics, but soon reappeared. Attempts made to eliminate the source of infection by colon and nasal irrigations and extracting decayed teeth were unsuccessful. During the entire time the urine was never free from albumin. Cultures from the nose and throat grew the *Staphylococcus pyogenes aureus*.

Five times during stay in the hospital the temperature rose to 102 and 103. The last time this occurred an incision was made in the left tonsil and a small quantity of pus evacuated.

March 3, 1910, five and one-half months after the child's admission to the hospital, under very light ether anesthesia, the tonsils and adenoids were removed by Dr. Mathews. The tonsils were large and soft but no pus pockets found. The adenoid mass was very large and showed suppurative infection.

"Two days after operation improvement is very noticeable. Edema and albumin are decreasing. Appetite improving. Child seems to take much more interest in surroundings." Twelve days after operation the following note was made: "Remarkable improvement. Edema has entirely disappeared. Appetite good. Gaining rapidly in strength. Throat and tonsillar fossae clean. Faint trace of albumin in the urine." Fifteen days after operation the patient was up walking about the ward. April 9, 1910, "Discharged. General condition excellent. Throat is clean. No edema. Urine has faint trace of albumin."

Three and one-half months after operation the patient returned to the hospital for observation. At this time he appeared perfectly well. No edema. There was no albumin in the urine, and only a rare hyaline cast could be found.

In Case 1, tonsillectomy was a very efficient method of curing a diphtheria bacillus-carrier. The organisms were undoubtedly harbored in the deep crypts of the tonsils. In Case 2, the exciting cause of the nephritis seemed to be in the adenoids and tonsils. It illustrates well the rôle these tissues may play in diseases of the kidney.

DEAFNESS FOLLOWING THE USE OF SALVARSAN

C. A. CLAPP, M.D., BALTIMORE

The following is a case report of deafness following the use of salvarsan:

A man, white, aged 22, had an initial lesion in April, 1911, for which he was treated by the use of mercury until October 9, when 0.6 gm. salvarsan was given intravenously. November 21, he had a severe attack of giddiness and vomiting with impairment of hearing, which confined him to his bed. He was treated at this time by a recent graduate who considered the case acute indigestion.

When first seen in the office Dec. 12, 1911, the patient still showed marked giddiness which was worse on closing the eyes. The ear-drums were normal; there was no spontaneous nystagmus. The left side of the face was slightly flat, and hearing was reduced to watch at 4 inches in the right ear and contact in the left. Barany's caloric tests showed slight functioning on the right side and none on the left. Patient was given 10

grains of potassium iodid three times a day, but the giddiness became more pronounced, and on December 19 he was put to bed and given pilocarpin hypodermically in increasing doses with hydragogue cathartics for ten days. After this time the giddiness was less.

Jan. 27, 1912, the Wassermann reaction was negative. The patient was kept on the iodid all summer, and on Oct. 16, 1912, his hearing had improved to watch at 3 inches in each ear, with a slight response to the caloric tests. His equilibrium is still bad but his slight facial paralysis seems to have entirely disappeared.

Whether this condition is due to the large dose of arsenic or to the liberation of large quantities of endotoxins, or shows that the medicament has not reached the deeper tissues, the fact remains that the occurrence of deafness is much more frequent since the use of this drug, three cases having occurred in Baltimore to my knowledge within the last two years.

513 North Charles Street.

Special Article

PROGRESS IN MEDICAL EDUCATION *

HENRY S. PRITCHETT

President of the Carnegie Foundation for the Advancement of Teaching

NEW YORK CITY

The foundation has continued its work in medical education by the publication during the past summer of Mr. Flexner's carefully prepared study of medical education in England, Germany and France. This forms an almost necessary supplement to the study of medical education in the United States and Canada, published two years earlier. The interest which has been displayed in this last bulletin, not only on this side of the water, but in England and in Germany, has been most gratifying. Following the suggestion of a number of those most actively interested in medical education and medical practice in Germany, an edition of the bulletin will be printed in German.

The comment on this publication from those directly concerned with American medical education has well illustrated the widely separated points of view which now hold among those dealing with this matter. By one critic the defects pointed out in foreign medical schools have been seized on as a proof that American medical teaching is quite abreast of, and even superior to, medical teaching in England and Germany. In another quarter the evident superiority of foreign schools in certain respects, as brought out in the report, has been resented as unpatriotic. These opinions represent, however, only the extremes. The great body of those interested in the matter have been glad to have a comparison of medical teaching on both sides of the Atlantic, written from the point of view of scientific medicine, and aiming to set forth the facts without partisanship. Medical patriotism which is willing to shut its eyes to actual conditions and glorify its own national weaknesses has no place to fill. There are no national boundaries in medicine.

* This is the chapter on medical education to be included in President Pritchett's annual report to the board of trustees of the Carnegie Foundation for the Advancement of Teaching. Printed by permission.

EUROPEAN VS. AMERICAN MEDICAL SCHOOLS

As a matter of fact, admitting the weaknesses which still inhere in most American schools in professorial appointments, in clinical examinations, in hospitals and clinical facilities, and in medical research, the report shows that in the eight or ten stronger American schools of medicine the student has, on the whole, as good an opportunity to learn the theory and practice of modern medicine as does the student of the European schools. This fact is most gratifying and encouraging. But the report brought out at the same time two other facts which cannot be lost sight of, and which are, on the whole, the most significant and important for Americans, whether laymen or practitioners, to apprehend.

The first is that, while European medical schools — for example, those of Germany — are practically comparable in faculties and standards, American schools range from the highest to the lowest conception of medical education and medical ideals. Side by side with schools of the best modern type, which are preparing men in a thorough way for the practice of medicine with a conscientious appreciation of the rights of the public, stand other schools whose function is to get the ill-trained and the unfit into medical practice by the shortest route which the varying laws of our states will permit.

SOME COMPARISONS

Boston offers to medical students at the same time the Harvard Medical School and the Boston College of Physicians and Surgeons; New York presents the medical schools of Columbia and Cornell and at the same time leaves open for the unwary the doors of the Eclectic Medical College; Baltimore presents to the medical student a choice between the Johns Hopkins Medical School and the Maryland Medical College; Chicago invites the candidate for medicine to choose between such institutions as the medical schools of the University of Chicago and of the Northwestern University on the one hand, and utterly unworthy agencies for medical training, like the Bennett Medical College, the Jenner Medical College and the Hering Medical College, on the other; St. Louis presents the newly organized and endowed school of Washington University and the purely commercial enterprise known as the American (Barnes) Medical College. These are not frontier towns. They are our oldest and richest centers of civilization. Yet even in these the state of public opinion, and of legal enactment, and of medical ethics is such that the worst in medical education can flourish alongside the best. The state of California, which contains the medical schools of the state university and of Stanford University, also countenances a group of the worst schools in the country, and recently chartered a "College of Medical Evangelists," where the "subjects of hygiene and sanitation are . . . studied from a biblical standpoint," and the degree of M.D. is given for a course which includes 900 hours of Bible, 540 of the practice of medicine, 250 in general evangelistic field work and 240 in care of the sick. This situation forms the most striking contrast between medical conditions in America and in Europe. To remedy this condition, we need, first of all, the education of public opinion to the difference between medicine as a business and medicine as a profession. The public needs yet to learn that medical teaching cannot be

had either on the plane of commercial effort or yet on that of ill-equipped devotion. It needs to learn that the maintenance of commercial and defective agencies for the training of physicians is a blow at public health and a betrayal of public interest; that society can obtain a full supply of men for the medical profession who are educated, well trained and devoted to a high professional ideal. In proportion as the public realizes this it will come forward with the necessary financial support to maintain on a sound basis all the medical schools that the country needs. By some such process must this anomaly of our civilization be dealt with.

NEED OF EDUCATIONAL SINCERITY

A second striking fact brought out by this comparative study of medicine in Europe and America has to do with the matter of educational sincerity. In Europe no university would accept the responsibility of a medical school except with the same obligation of support and with the same educational ideals under which it conducts other departments of instruction. In America alone does one find a college or a university lending the shelter of its name and its charter to a medical school which it neither controls nor supports, and whose ideals of teaching are on an entirely different plane from those maintained in the other departments of its work.

Examples of this sort of relation are so wide-spread that instances will at once occur to any one familiar with the situation. Bowdoin College and the Maine College of Medicine at Portland; the Marquette University and the Milwaukee Medical College; the University of Southern California and the Los Angeles College of Physicians and Surgeons; Loyola University and the Bennett Medical College; Willamette University, Salem, Oregon, and its medical department; the University of Tennessee and its medical school at Memphis; Union University and the Albany Medical School; the Lincoln Memorial University and its medical school at Knoxville; the Texas Christian University and the Fort Worth School of Medicine; Cotner University and its medical school at Lincoln, Neb., are all instances of this sort of relationship.

These medical schools are not entirely comparable. Some of them, like the medical department of Cotner University, are hopelessly bad. Others have come to the better class of commercial medical schools. The Maine Medical School, for example, has showed marked improvement over its situation of two years ago, and a modest sum of money has been raised for its improvement. The University of Tennessee has during the past year for the first time obtained support for its medical school, and the use of this money has made a great improvement in the wretched enterprise which had hitherto constituted its medical department. But all these colleges share in the maintenance of a relation under which they commend to the public schools whose academic standards belong to an entirely different order from that of the work which these colleges directly support and control. Bowdoin College, for example, and its medical department represent totally different educational ideals. When the college invites a student to study Latin, or physics, or literature at Brunswick, it undertakes to give him an education in these subjects quite comparable to that which he could get at Harvard or McGill. But it invites the medical candidate to accept an education which it knows to be utterly inferior to that which he could get at Boston or Montreal. Similarly, Union University and the Albany Medical School, the University of Tennessee and its Memphis department of medicine, belong to different educational worlds. To stand for a high ideal of education in one place and for a low one in another is an artificial and insincere educational program. Nowhere on the continent of Europe does a college or a university deal with medicine on this commercial basis.

What are the reasons which impel colleges — sometimes old and well-known institutions — to maintain so singular a relation?

REASONS FOR ARTIFICIAL RELATIONSHIPS

This question would not be a simple one to answer. Many factors enter into the situation — institutional ambition, desire for power or for numbers, social influence — nearly every motive except an intelligent desire to serve the cause of medical education.

Some of these relations go back to a time when medicine was taught without laboratories. Bowdoin's medical college relation is an old one. An old connection is not always an easy one to drop. In addition, as Bowdoin is in a small town the medical school is generally looked on by the friends of the college as forming a good foothold in Portland. The artificial relation existing between Union University and the Albany Medical School is also one which belongs to a previous epoch in medicine. Originally assumed in order to give the semblance of a university to Union College, it is kept alive at this day by a combination of social relations, institutional ambitions, and of medical politics too complex for an outsider to dissect. On the other hand, the University of Tennessee took over the Memphis School, which now forms its medical department, only two years ago, after a similar weakling which it had fostered at Nashville had died a lingering death. Just what considerations moved the trustees to take this action, outside of the wide-spread desire of state universities to keep hands on all lines of higher educational work, it is difficult to see. If the University of Tennessee has the money to develop a medical school, the evident place to develop it would be at Knoxville in connection with its own departments. The Memphis venture has the air of a political, not an educational, enterprise.

UNFORTUNATE OPTIMISM IN WEAK SCHOOLS

Whatsoever sympathy one finds it possible to exercise toward these medical teaching agencies must go to the men in the medical schools, not to the colleges. So far as the colleges are concerned, the relation is in nearly every case an insincere one. On the other hand, many of the teachers in the medical schools work with genuine devotion and often at great personal sacrifice. To comply with the law, teachers of the underlying sciences are obtained at pitiful salaries. Practitioners in many instances give their time and their means. Unfortunately, devotion is not always wise. To teach poorly a certain number of medical students who otherwise would get a better training elsewhere may call forth admirable devotion, but it is justifiable only when a definite and satisfactory status can be fairly seen in the future. Unfortunately, too, the same optimism which makes every college believe that the education which it gives is

somehow superior to that given elsewhere finds a home in the humblest medical school. I have found teachers of medicine whose students lacked almost every facility of laboratory or hospital, who lived in the midst of confusion and neglect, and who nevertheless persuaded themselves that students were better off with them than in well-appointed, clean and sanitary schools. Devotion is a wonderful thing. The world could not move without it. But one can well believe that in America, where devotion is so common, the ability to let alone the thing one cannot do well is a quality even more needed at the present moment.

These two things — the existence side by side of medical schools of the highest and the lowest type, and the anomalous relations between the universities and the medical schools — form the striking points of contrast between medical education in Europe and America as brought out by this report.

STRIKING EXAMPLES OF UNEVENNESS

The unevenness of our situation has recently received striking proof in the city of New York. The newspapers have dealt with two events of widely different character. The medical department of Cornell University has been enabled by a generous benefaction to arrange an alliance with the New York Hospital, in virtue of which it will hereafter control one-half the clinical facilities of this institution. Cornell thus becomes one of the medical schools which, at a comparatively small outlay, possess the equivalent of a university hospital. It remains to be seen whether, in making its appointments, it will cut loose from local traditions and honor men of ability and ideals regardless of where they are found; but in any case the proper relationship and opportunity have been secured. Simultaneously with this encouraging event, a faculty split, recalling the old proprietary days, was reported from the Fordham University Medical School. It appears that this school, by means of a faculty committee, had undertaken to institute certain improvements in order to remain in good standing with the Council on Medical Education of the American Medical Association. These improvements were so obviously necessary that no reputable school should have required pressure from any outside source before making them. Nevertheless, as money was needed to carry them out, the school authorities did not feel themselves in a position to carry out the faculty pledges. In consequence the most progressive members of the faculty withdrew in a body. At this point the characteristic difference between a genuine and a nominal university department appears. If a dozen professors withdrew from a university department, the entire country would have to be scoured to replace them; but when a dozen medical professors revolt from a proprietary medical school, their places can all be filled next morning from the ranks of the local profession. And this is what has been done by Fordham University. One realizes sharply the unevenness of our medical teaching when he finds that the American Medical Association still feels it necessary to construe its list so liberally as to include in its Class A weak schools of medicine like those of the Albany Medical College, the Medical School of Maine, the University of Vermont Medical School and the Medical School of the University of Buffalo. Undoubtedly the American Medical Association has done wisely in not going too fast. When one remembers how rapidly this reform has gone forward in six or seven years as the result of the intelligent work of this organization, he has no disposition to criticize the outcome. There is, however, always the danger in any attempt to separate educational institutions into artificially defined groups that the grouping will be assumed to represent more than it can possibly represent. When one realizes that Class A includes at the same time schools of medicine like those of Harvard, of Johns Hopkins and of Western Reserve, and weak schools like those just mentioned, he realizes how short a distance we have traveled toward a uniformly high plane of medical training. This classification is in fact purely provisional. Without question it will be advanced as rapidly as the conditions will warrant. Some of the weak schools now included in Class A will be able to meet the rapidly rising requirements. Others will inevitably drop out. The college or the medical school which expects to remain permanently in this class may well face now the fact that within a few years Class A will include only true university schools of medicine with paid professors in clinical branches, full laboratory facilities and right hospital relations.

EVIDENCE OF SUBSTANTIAL PROGRESS

Fortunately there is not lacking concrete evidence of substantial progress. The University of North Carolina, the University of Missouri, the University of Denver, the Central University of Kentucky, Chattanooga University, and, more recently, Washburn College at Topeka, Kan., have frankly abandoned clinical schools which they felt were unnecessary and for whose support they could not hope to provide. The University of Illinois applied to the legislature for an adequate appropriation for its clinical school at Chicago, and when the effort finally failed the university promptly severed its connection with the Chicago school and arranged to confine its medical instruction to the two years which it could give successfully at Urbana. In various directions — the improvement of standards, better teaching, larger support, better hospital relations — the past few years have shown most encouraging progress in the United States and Canada.

Credit for this progress belongs in the first instance to the American Medical Association and its Council on Medical Education. The annual conferences of the Council have been most interesting and fruitful. This is perhaps especially true of the last, to which Mr. Frederick G. Hallett, secretary of the Conjoint Board of the Royal Colleges of Physicians and Surgeons, was invited from London. It has long been plain that the time was ripe for an improvement in the methods of conducting our state examinations. In the past these examinations, wholly in writing, not only made it possible for poor schools to appear successful, but actually compelled good schools to adopt to some extent vicious teaching methods. The English examinations, largely practical in character, have the opposite tendency; and Mr. Hallett's clear exposition proved that such tests are both feasible and necessary in our own states. In addition to its educational conferences, the Council by its inspections, at once judicious and thorough, has established a general consensus of opinion as to the standard which may fairly be required at this moment of an

establishment that undertakes to teach medicine. Schools incapable of meeting such requirements are fast disappearing. The total of 166 schools of all kinds existing in the United States and Canada in June, 1904, has in eight years decreased to 117 in 1912. Homeopathic schools, of which there were twenty-two in 1900, have now fallen to ten; eclectic schools from ten to six; the physiomedical schools have entirely disappeared. The total student enrolment, which reached 28,142 in 1904, has now declined to 18,412. As the student bodies of the higher grade schools have steadily advanced in numbers, this considerable decrease has taken place precisely where in the public interest it should take place, namely, in the weaker schools. It is thus obvious that the destruction of one inefficient school does not merely result in increasing the enrolment of another: it actually and absolutely keeps a certain number of unfit men out of the profession.

SMALLER QUANTITY—IMPROVED QUALITY

The changes just mentioned are mainly negative in character; they indicate that there is less of what is bad or undesirable. Meanwhile, positive progress has also taken place. It was pointed out in the fourth bulletin of the Carnegie Foundation that there could be no genuine educational standard as long as medical colleges that were professedly on a high school basis continue to admit students conditioned or on a so-called "equivalent." The Association of American Medical Colleges has now framed its rules so as to exclude from membership all schools adhering to these practices. Meanwhile, thirty medical schools require at least two years of college work for entrance and fifteen more require one. For the time being it is therefore important to make sure that standards are genuine rather than higher, and doubtless the association will look to this end. The internal improvements that have been made in the medical schools which survive are more remarkable and significant than the mere reduction in the number of medical colleges or medical students and graduates since 1904. The erection of new buildings, the construction of new laboratories, the installing of libraries and museums, the noteworthy extension of medical research, the employment of expert teachers, the improvement of the medical curriculum, the lengthening the medical school year from twenty-six weeks in many schools to thirty-four or thirty-six weeks, the raising of entrance requirements and the greater strictness and intelligence in their enforcement, the improvement in the keeping of wards, the improved methods by which a check is kept on the medical student's work, the increased facilities for the student's individual work at the bedside, the closer relations between medical schools and hospitals—all these things constitute a marvelous record of progress in the past seven years. The fact that all schools which aspire even to modest work now require a fair education for admission is perhaps the most significant fact of all. The experience of Europe proves that the requirement of a good education as a preliminary to the medical school exercises a larger influence for good than all other requirements combined. The simple demand that the physician shall be an educated man is the most important step toward a higher plane for the profession. American medical schools are committed to this step.

GREATEST NEED IS ADEQUATE SUPPORT

The question of adequate support for medical education becomes for the next decade a most far reaching and important one. Increased funds of varying amounts have been widely procured for laboratories, hospital extensions, and for the promotion of full time teaching and research. The Education Department of New York has taken advantage of this improvement to announce that in the near future it will cease to recognize schools employing less than six whole-time instructors. The department, furthermore, very wisely refuses to recognize nominal salaries as complying with its conditions. Naturally, in this general effort to procure money in order to escape further criticism waste inevitably occurs: many schools which would do better to emulate the example of those that have closed their doors struggle to imitate those that are destined to survive. Gifts and appropriations of $5,000 and similar sums for improvements are thus all too common. They enable weak establishments to maintain themselves a little longer. In no field of education to-day can wise giving do more than in medicine, but in no field does the intending giver need wiser discrimination.

CONSTRUCTIVE WORK THROUGH PUBLICITY

I venture one word further concerning the work of the Carnegie Foundation in this field of education. Its immediate connection with the subject dates from the publication of the Fourth Bulletin in June, 1910. In cooperation with the educational council of the American Medical Association and the Association of American Medical Colleges, both of which had for some years previously been effectively engaged in the work, it has sought to define the principles to which sound educational organization in medicine should conform at this time, and practically to assist in embodying these principles wherever opportunity offers. For the present these efforts are directed to the elimination of unnecessary schools, to the abrogation of all sectarian privileges, to the improvement of the student body as fast as local conditions permit, and to the replacement of proprietary establishments by adequately equipped and financed university departments, in whose conduct educational and scientific rather than professional motives are emphasized. In particular the foundation has sought to assist positive and constructive effort by frank publications on medical education which aimed to describe actual conditions, and to stimulate by a critical discussion the appreciation of things to be done and those to be avoided. The studies contained in the sixth bulletin, on medical education in Europe, fully sustain the position which the foundation has previously taken, that medical education is primarily an educational, not a professional question; that in the fixing and administration of entrance requirements, the choice of teachers—clinical as well as laboratory—the arrangement of the curriculum, in the relation of the hospital to the medical school, and in the conduct of examinations, the point of view of good teaching is of decisive importance.

It is the purpose of the foundation to pursue its work steadily in the field of medical education. The value of such an agency lies in no small measure in its continuing ability. To follow such a study not for two or five or ten years, but for a generation, is to make a con-

tinuing contribution. It is this work which the foundation hopes to do in medicine as well as in other educational fields which it enters.

I shall recommend to the trustees at an early date a study of dental education and dental training, and also a study of the training for pharmacy. There is at present much confusion as to these subjects, both of which are closely related to medicine, though standing on very different bases and demanding qualities of widely differing order. The matter of hospital relations is also one that urgently demands a fair statement of the existing facts before wide-spread improvement can be hoped for.

Therapeutics

THE FALLACY OF HYPOPHOSPHITE TREATMENT

Hypophosphites first began to be used as drugs about the year 1855, and have been used more or less ever since in diseases that cause loss of nutrition. They have been recommended especially in pulmonary tuberculosis with the belief that the phosphorus was of special value in this disease, and that the hypophosphite was the best form in which to administer the phosphorus element.

Phosphorus has long been known to be a stimulant to certain forms of nutrition, and the phosphates have also been credited with therapeutic virtues. In tuberculosis, however, the hypophosphites have been urged as especially specific. What are the reasons and evidences for this opinion?

The action cannot be attributed to the sodium, potassium or magnesium with which the hypophosphites are combined, for other salts of these bases are not credited with similar specific effects. Nor can they be considered as nutrients, for ordinary food contains plenty of these bases. It is also not necessary to discuss the value of iron hypophosphite and manganese hypophosphite, as iron can be obtained in many better ways, and administered, if insufficient, in many better forms; and manganese is probably not necessary to the body.

In the treatment of pulmonary tuberculosis, we come then, supposedly, to a discussion of the most valuable form of hypophosphite, namely, the calcium hypophosphite which has the formula $Ca(H_2PO_2)_2$.

As the calcium which it contains can be administered in many other ways as readily and perhaps more pleasantly, it is a question of the hypophosphite combination and what becomes of it in the body. Unfortunately for the believers in the hypophosphite treatment, there are absolutely no scientific data whatever to show that the hypophosphites have any specific value in the system. It has been shown that they do not oxidize to phosphates, substances which are of value to the system, and which must evidently be obtained from some food or from some other drug even when hypophosphites are administered. It has also been shown that the hypophosphites can almost entirely be recovered unchanged from the urine. They have entered the stomach, been absorbed from the intestines, passed through the liver without any special change except possibly a small loss of iron from the iron combination, and then passed out through the kidneys without having done anything to the nutrition of the body.

If a quinin salt or strychnin is given with the hypophosphites, there will be some bitter tonic effect and some general stimulant action, but this has nothing whatever to do with the question of the value of hypophosphites.

We have stated, and it is easily demonstrable, that calcium can be administered and received into the system in many better ways than by the more or less disagreeable hypophosphite preparations. If it is a question of the value of the phosphorus element in the hypophosphite, for the sake of argument, and in deference to the belief of those who find some specific value in the hypophosphite, it may be stated that about three-sevenths of the weight of the molecular combination of calcium hypophosphite is phosphorus. This would mean that if calcium hypophosphite should break up or oxidize into other combinations, about 0.04 gm. of each 0.1 gm. would be available phosphorus for the formation of phosphates or nucleoproteins.

A person receives approximately 1 per cent. of available phosphorus in every egg that he eats. He receives about 1 per cent. in casein; in other words, in every hundred grams of casein he would receive 1 gm. of phosphorus for the formation of phosphates, nucleoproteins and lecithins. He would receive 0.3 gm. of such available phosphorus in a quart of milk in addition to the liberal supply of additional phosphorus in the form of inorganic phosphates. About one-eighth of an ordinary cream cheese is phosphorus compounds. Put in another way, one glass of milk would equal about 10 gm. of casein, which, 1 per cent. of the casein being phosphorus, would equal about 0.1 gm. of food phosphorus. An eighth of a pound of ordinary American cream cheese contains about 0.1 gm. of available phosphorus. The yolk of one medium-sized egg would contain from 0.08 to 0.1 gm. of such phosphorus. Therefore there can be no reason for administering a doubtful hypophosphite in order to give a patient phosphorus.

The nervous tissues are rich in lecithin, which contains phosphorus, and the various nucleoproteins of the body contain phosphorus. Therefore it is not possible that the tissues during life are really much short of phosphorus, unless many of the ordinary foods are entirely withheld from the patient. Even the value of calcium in the form of such a substance as hypophosphite of calcium is negligible for the tuberculous healing process, as the calcium for that purpose comes from the regular calcium constituents of the blood and can scarcely be expected to come from the hypophosphite combination, which has been shown not to break up or be oxidized in the body.

We must therefore conclude that hypophosphites have absolutely no value as a source of phosphorus to the body. This does not exclude the possibility that they might have some direct action of their own on the course of the disease. For this, however, there is no experimental evidence. There is some clinical evidence in its favor; but it is noteworthy that very little, if any, of this comes from hospitals where careful observations are practiced. Even the favorable clinical opinions amount to little more than subjective improvement — a matter which is of very little scientific value in tuberculosis.

While there is thus very little critical evidence in favor of the hypophosphites, they are harmless in themselves. Their main danger is in encouraging the poor phthisic to seek his salvation in drugs, and most seriously, in nostrums, instead of in the hygienic measures which have thus far proved the most successful treatment. This danger of drugging is emphasized and reflected by the

absurd and unscientific combinations in which the hypophosphites are prescribed.

The Pharmacopeia recognizes calcium hypophosphite, iron hypophosphite, manganese hypophosphite, potassium hypophosphite, sodium hypophosphite, the syrup of hypophosphites, the compound syrup of hypophosphites, and the emulsion of cod-liver oil and hypophosphites. The National Formulary recognizes the elixir of calcium hypophosphite, the solution of hypophosphites, the compound solution of hypophosphites, the syrup of calcium hypophosphites, and the syrup of calcium and sodium hypophosphites. All of these preparations, of both the Pharmacopeia and the National Formulary, could be deleted from these official books without any loss to mankind.

The syrup of hypophosphites, U. S. P., contains: calcium hypophosphite, potassium hypophosphite, sodium hypophosphite, dilute hypophosphorous acid, sugar, tincture of fresh lemon-peel and water.

As there is no known value in hypophosphorous acid, every ingredient of this mixture could be eliminated except the bare possible value of the calcium hypophosphite, and the multiple mixture be repudiated. As to the calcium hypophosphite, as just stated there is no known chemical or physiologic value of the hypophosphite salt, and both calcium and phosphorus can be given better by the ordinary foods.

The compound syrup of hypophosphites contains: calcium hypophosphite, potassium hypophosphite, sodium hypophosphite, iron hypophosphite, manganese hypophosphite, quinin, strychnin, sodium citrate, dilute hypophosphorous acid, sugar and water.

This multiple mixture is a disgrace to any modern book, and it is to be hoped that the disgrace will not be perpetuated in the new Pharmacopeia. As we have previously stated, iron, manganese, quinin and strychnin may be administered, if needed, in many better ways. There can be no excuse for this hodge-podge or "hash" of drugs, or, we might say, disagreeable soup—or for copying or perpetuating the nostrum which this formula really is supposed to ape. Let us dismiss this preparation from the Pharmacopeia and from therapeutic use.

It is not necessary to name the several proprietaries and the several nostrums that exploit the hypophosphite treatment of lack of nutrition or as an antidote to tuberculous processes. Whenever we administer these preparations of hypophosphites we are perpetuating a myth, we are giving something which we know has no scientific value, and has no clinical value except as the combination may contain tonics, and has no food or nutritive value that can compete with milk, eggs and cheese. When we order such combinations, especially if they are expensive proprietaries or nostrums, we are insulting our own intelligence.

DISTURBANCES OF THE HEART*

(Continued from page 667)

PAROXYSMAL TACHYCARDIA

This condition is generally termed by the patient a "palpitation," and palpitation of the heart is recognized by most physicians as meaning a too rapidly-acting heart, the term "tachycardia" being reserved for an excessive rapidity of the heart. Some persons normally have a pulse and heart too rapid; children more or less constantly have a heart-beat of from 90 to 100. Women have more rapid heart action than men, and it becomes more rapid with their varying functions, specifically increasing in rapidity before, and perhaps during, menstruation. Many patients have a rapid heart action with the slightest increase in temperature and in any fever process. Some have a rapid heart action after the least exertion without any cardiac lesion or assignable excuse for such rapidity. Others have a rapid heart with mental activity and excessive excitement. Therefore in deciding that a heart is abnormally rapid, as in bradycardia, one must individualize the patient.

During or after illness many patients are said to have palpitation when the real cause is an unhealed myocarditis. Tuberculosis almost invariably causes increased heart action, even when there is no fever. All high fever increases the heart's action, but not so markedly in typhoid fever as in other fevers; in fact, the heart in typhoid fever, during the early stages, is likely to be slower than the temperature would seem to call for. In anemia when the patient is active the heart is generally rapid. The rapid heart from cardiac disease has already been considered. For the palpitation or rapid heart just described there is little necessity for other treatment than what the acute or chronic condition would call for. With proper management the condition will improve unless the patient has an idiosyncrasy for intermittent attacks of slightly rapid heart, as from 100 to 120 beats per minute.

A permanently rapid heart, when the patient is at rest, is generally due to hypersecretion of the thyroid, which will be discussed later. Paroxysmal tachycardia, the condition now under discussion, is a name applied to very rapid heart attacks in persons who are more or less subject to their recurrence. They may occur without any tangible excuse, and are liable to occur during serious illness, after a large meal, after a cup of tea or coffee, or after taking alcohol. The heart may beat as rapidly as from 150 to 200 times a minute, or even more, with no other symptoms than a feeling of constriction or tightness in the chest, an inability to respire properly and a feeling of "air hunger." The patient almost invariably must sit up, or at least have his head raised. Attacks of cardiac delirium may occur with serious lesions of the heart, as valvular disease or sclerosis, but paroxysmal tachycardia occurs in certain persons without any tangible cardiac excuse. The auricles of the heart may act more energetically than normal and precede as usual the ventricular contraction; or the auricles and ventricles may contract almost together — a so-called "nodal" type of contraction. Rarely does a patient die of paroxysmal tachycardia. The length of time the attack may last varies from a few minutes to an hour, or even for a day or more.

There is no specific treatment for paroxysmal tachycardia. What is of value in one patient may be of no value in another; in fact, drugs are rarely successful in ameliorating or preventing the condition. Patients who are accustomed to these attacks often learn what particular position or management stops the attack. Sometimes a patient rises and walks about. Sometimes an ice-bag over the heart will stop the attack. If there is no serious illness present, and no serious cardiac disease causing the condition, and a patient is known to have an overloaded stomach or bowels, an emetic or a briskly-

* EDITORIAL NOTE: This series of article on "Disturbances of the Heart" will be issued in book form, in accordance with the desires of a large number of our readers from whom we have received letters. We will appreciate it if as many persons as possible order copies in advance, so that we may have some idea how many to print.

acting cathartic is the best possible treatment. The attack often terminates as suddenly as it begins, without leaving any knowledge as to which particular treatment has been beneficial. A patient who is well and has an attack of tachycardia should be allowed to assume the position that he finds to give him the most comfort, and to use the means of stopping his attack which he has found the most successful. In the absence of his success or of his knowledge of any successful treatment, a hypodermatic injection of 1/6 or even ¼ grain of morphin sulphate is often curative. Atropin should not be given, as it may increase the cardiac delirium.

If an attack lasts more than an hour or so, one of the best treatments is the bromids, which should be given either as potassium or sodium bromid in a dose of 2 or 3 gm. (30 or 45 grains) at once. Sometimes one good-sized dose of digitalis may be of benefit, but it is often disappointing, and unless there is a valvular lesion with signs of broken compensation, it is rarely indicated. It should also be remembered that, if the petient is receiving digitalis in good dosage for broken compensation, cardiac delirium may be caused by an overaction of the digitalis. Such overaction would be indicated by previous symptoms of nausea, vomiting, intestinal irritation, a diminished amount of urine, headache and a tight, band-like feeling in the head, cold hands and feet, and a day or two of very slow pulse. If none of these symptoms is present, though a patient has received digitalis for broken compensation, a tachycardia occurring might not contra-indicate digitalis, as much of the digitalis on the market is useless, and a patient may not actually have been obtaining digitalis action.

If the tachycardia occurs in a patient with arterio-sclerosis, especially if there is much cardiac pain, nitroglycerin is of advantage; also warm foot-baths. If there is prostration and a flaccid, flabby abdomen, a tight abdominal bandage may be of benefit.

Gastric flatulence, while perhaps not a cause of the tachycardia, is liable to develop and be a troublesome symptom. Anything that causes eructations of gases is of benefit, as spirit of peppermint, aromatic spirit of ammonia or plain hot water. If there is hyperacidity of the stomach, bicarbonate of sodium or milk of magnesia will be of benefit.

The ability of some patients to stand a rapid heart action without noting it or being incapacitated by it is astonishing. It may generally be stated that a rapid heart is noted, and a pulse above 120 generally prostrates, at least temporarily, a patient who is otherwise well, provided the cause is anything but hyperthyroidism. A patient who has hypersecretion of the thyroid will be perfectly calm, collected, often perhaps not seriously nervous, and, with a heart beating at the rate of 140, 150, 160 and even 170 per minute, will state that she has no palpitation now, although she sometimes has it. A heart thus fast, with a patient not noting it and not prostrated by it, is almost diagnostic of a thyroid cause.

Some patients, both men and women, cannot take even a small cup of tea or coffee without an attack of paroxysmal tachycardia. Such patients, of course, quickly learn their limitations.

HYPERTHYROIDISM

The presence of a well-marked case of Graves' disease or exophthalmic goiter is not necessary for the secretion of the thyroid to be increased sufficiently to cause tachycardia; in fact, an increased heart rapidity in women often has hyperthyroidism as its cause. The thyroid gland hypersecretes in women before every menstrual period and during each pregnancy, and with an active, emotional, nervous life, social excitement, theaters, too much coffee, and, unfortunately to-day among women, too much alcohol, it readily gives the condition of increased secretion; and the organ that notes this increased secretion the quickest is the heart.

The tachycardia of a developed exophthalmic goiter is difficult to inhibit. Digitalis is of no avail, and no other single medicinal treatment is of any great value. The tachycardia will improve as the disease improves. On the other hand, nothing is more serious for this patient than her rapid heart, and if it cannot be soon slowed, operative interference is absolutely necessary. If the rapid heart continues until a myocarditis has developed and a weakening of the muscle fibers occurs or dilatation is imminent or has actually occurred, operative interference is serious, and most patients under these conditions die after a complete operation, i. e., the removal of from one-half to two-thirds of the thyroid. In such cases the only excusable operative interference is the graded one, namely, the tying of first one artery and then another of the thyroid to inhibit the blood-supply to the gland so that it may not furnish so much secretion. If the heart then improves, a more radical operation may be done without much serious danger. Therefore the working rule should be that, if a heart does not quickly improve under medical management, operative interference should not be delayed until the heart has become degenerated.

If tachycardia is the only serious symptom present in a patient who is considered to have hyperthyroidism, it may generally be successfully treated by insistence on quiet, cessation of all physical and exciting mental activities, more or less complete rest, the absolute interdiction of all tea, coffee, or other caffein-bearing preparations, total abstinence from alcohol, the restriction to a milk, cereal and fruit diet (the withdrawal of all meat from the diet), the administration of calcium, as the calcium glycerophosphate in dose of 0.3 gram (5 grains) in powder three times a day, and for a time, perhaps, the administration of bromids. If the depressing action of bromids on the heart is counteracted by the coincident administration of digitalis, they will act only for good by quieting the nervous system and more or less inhibiting the secretion of the thyroid gland.

If a patient has exophthalmic goiter fully developed, absolute rest in bed, with the treatment above outlined, should soon cause improvement. If it does not, the operative treatment as above advised should be considered. If myocarditis has been diagnosed, the minor operations should be done if the patient does not soon improve. The prolongation of the treatment depends on the condition and the amount of improvement

If the physician is in doubt as to whether this particular tachycardia is caused by hyperthyroidism or not, the administration of sodium iodid in doses of 0.25 gm. (4 grains) three times a day will make the diagnosis positive within a few days. If the trouble is due to hyperthyroidism, all of the symptoms will be aggravated; there will be more palpitation, more nervousness, more restlessness, more sweating and more sleeplessness. In such cases the iodid should be stopped immediately, of course, and the proper treatment begun.

(To be continued)

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SATURDAY, MARCH 8, 1913

SOME FEATURES OF MALNUTRITION IN INFANCY

German pediatrists use the term *Nährschaden* to designate various types of malnutrition in children. The emphasis is placed on a pathologic make-up of the organism as the result of unsatisfactory utilization of the available food-supply. The defect may be conditioned by the individual itself and ultimately result in some abnormal composition of the body owing to an inherent anomaly; or it may be the outcome of an inadequate quality of the nutriment supplied. In other words, here is a situation in which both food and bodily constitution may be at fault.

Abnormally functioning mechanisms are not easily located in the human body — and least of all in the infant organism. Food factors are more readily amenable to analysis and review from the point of view of their physiologic fitness. The study of the association of pathologic phenomena with dietary causes in the formative period is just beginning to attract the attention which it deserves. Perhaps the most prominent, because most familiarly recognized, type of malnutrition in this group, is that observed in which carbohydrates preponderate in the diet, as in certain cereal foods. It is typical of the undue use — or abuse — of proprietary infant foods which results in profound alterations of the body, the so-called *Mehlnährschaden* of infants.

The preponderance of carbohydrate in these dietaries may have as a corollary an attendant poverty in other foodstuffs, notably proteins and inorganic salts. The opinion of pediatrists as to the relative importance of these different factors in the etiology of the nutritive defect has varied. By some, like Heubner, the low protein content of the food-intake of infants of the type under discussion has been emphasized as the detrimental feature. Others, like the Czerny school, have centered attention on the salt problems in these nutritive disorders. Professor Salge[1] of Freiburg has attempted to interpret the known phenomena and apply diagnostic methods in practice. He is not inclined to accept the low-protein theory of causation, because the changes observed in the organisms of these unsuitably fed infants point to severe disturbances in the water metabolism which is far more likely to be associated with salts than with proteins. Of course the possible rôle of tissue colloids must not be overlooked in such connections.

Salge has observed that at very early ages improper feeding ultimately betrays itself in changes in the composition of the blood which can be detected by comparatively simple procedures. The protein content of the serum and its quota of inorganic salts sink to unexpected levels, indicating a real impoverishment. This does not occur until quite late in the progress of the malnutrition. It is a postulate of physiology that the blood aims to conserve a constant composition. The tissues therefore disclose the nutritive defects much sooner; and only when compensatory processes no longer suffice does the blood-picture change. In the severer types, however, Salge states that he has never failed to detect a poverty of salts in the serum. So long as this has not supervened — so long as the blood, the main pillar of the system, remains unimpaired — recovery can be induced by correcting the dietary, notwithstanding the exhibition of severe symptoms on the part of the skin, muscles, etc.

The capacity of the infant organism to withstand the damages of unsuitable cereal feeding (which encompasses the majority of the cases) depends somewhat on conditions of age. The appearance of marked changes in the composition of the blood suggests an unfavorable prognosis. This unfavorable sign serves further to explain the lowered resistance of such malnourished infants to the invasion of infective organisms.

1. Salge, B.: Ein Beitrag zur Pathologie des Mehlnährschadens der Säuglinge, Jahrb. f. Kinderh. 1912, lxxvi, 125.

INCLUSION BODIES IN SCARLET FEVER

A few months ago attention was called in these columns[1] to a newly observed phenomenon in scarlet fever which gave promise of proving valuable in the diagnosis of this disease. Certain inclusion bodies in the white blood-cells were found by Döhle, Kretschmer, Ahmed, Nicoll and Williams and others to be of frequent occurrence in scarlet fever. It was not certain, however, that they appeared in all cases of scarlet fever, and that they did not occur in some cases of measles, diphtheria, pertussis, tonsillitis and streptococcal infections.

As pointed out, the peculiar virulence, treachery and epidemicity of scarlet fever lend particular interest to any diagnostic procedure which will facilitate early diagnosis, especially in obscure or mild cases, for it is to be remembered that the mild case may initiate a series of most virulent cases, and the obscure case is not infrequently complicated with some other disease. In fact, scarlet fever may be entirely overlooked when associated with diphtheria, measles, pertussis and other affections.

1. Alleged Diagnostic Sign of Scarlet Fever, Editorial, THE JOURNAL A. M. A., July 20, 1912, p. 198.

Ker, indeed,[2] states that he has seen four infections existing concurrently in the same patient: scarlet fever, diphtheria, chicken-pox and pertussis. It is evident that a reliable diagnostic measure would be of the highest value in obscure, mild and complicated cases.

Granger and Pole[3] have recently added another series of cases in which the blood was examined for Döhle's inclusion bodies. These authors use a simplified staining method which has certain advantages over the Manson method described in THE JOURNAL.[1] By this method ordinary blood-smears are made, and after being dried in the air, are fixed by being passed several times through a flame. They are then dipped into water, and the excess of water is removed by a few vigorous shakes. They are now covered with a solution of phenol methylene-blue for thirty seconds. This solution is made by adding 1.5 gm. of methylene-blue to 10 c.c. of absolute alcohol and 100 c.c. of a 5 per cent. solution of phenol in water. The red cells are not stained, while the polymorphonuclear white cells and the inclusion bodies are stained as in Manson's method.

The conclusions presented by Granger and Pole are drawn from the examination of 191 cases of scarlet fever, 37 of measles, 27 of diphtheria, 24 of tonsillitis, 20 of pertussis, 20 of serum rash, 7 of urticaria, 4 of pneumonia, 3 of erysipelas and 4 normal. Their results indicate that, excluding the malignant fatal toxic type of scarlatina, the inclusion bodies of Döhle probably occur in every true case of scarlatina during the first four days of illness, and that absence of the inclusion bodies practically excludes scarlet fever. In nearly every case the inclusion bodies were present up to the fourth day, after which they appeared with decreasing frequency and after the eighth day are seldom found. In a few cases, however, the bodies were found as late as the third or fourth week.

Granger and Pole found the inclusion bodies present in rather a large percentage of the cases of diphtheria, tonsillitis and measles; hence they were of no value in a differential diagnosis from these affections. In fact, these authors believe them to be present in most of the diseases caused by the ordinary pyogenic organisms, especially if streptococci are present. In toxic rashes none was found. It is impossible to diagnosticate scarlet fever from this blood examination alone.

So far no acceptable theory has been advanced to explain the nature or origin of these inclusion bodies. Undoubtedly they have some more or less specific relation to scarlet fever, but whether or not this relation is distinctive enough to be of absolute diagnostic value can be determined only by further study and observation of large series of cases and of many diseases. Explanation of the nature of the bodies may conceivably throw light on the etiology of scarlet fever.

2. Ker, C. B.: Infectious Diseases, 1909, p. 526.
3. Granger, John, and Pole, C. Kinsley: Inclusion Bodies in Scarlet Fever, Brit. Jour. Child Dis., January, 1913, v. 9.

ENDEMIC GOITER

It has almost become a conventionality to preface remarks about the etiology of goiter with the statement that the cause is unknown. Yet the problem is so interesting, the statistics are so suggestive, the opportunities for theorizing so inviting, and the practical aspects so important that the most diverse ideas on the subject have been entertained for many years. Certain factors can at once be ruled out in view of the fact that goiter, in its endemic form especially, occurs in every latitude, at every altitude where people live, and in various climates. Nevertheless there is an unquestionable relation of goiter to locality, and the influence of a region exhibits itself alike on the human beings and the domesticated and wild animals inhabiting it. There is difficulty, therefore, in escaping the conclusion that the cause must exist in the air, the soil or the water.

The consequences of endemic goiter and the maladies with which it may be intimately associated are no longer treated with the professional indifference characteristic of a generation ago. The number of individuals involved and the wide-reaching effects are better appreciated in the light of the growing statistics on the goitrous affections, so that a spirit of responsibility has been aroused. It is, of course, a truism that every advance in our knowledge of the etiology of disease represents progress toward the ultimate control thereof. Accordingly the evidence of the incidence of endemic goiter and the theories as to its cause are again being sifted over and subjected to critical inspection from twentieth-century points of view. An illustration of this type of research is furnished by a recent investigation of the goiter situation as it exists in Bavaria.[1] This has shown that the manufacture of statistics is not always conducted with the precision or insight which the question in hand demands. According to the judgment of Schittenbelm and Weichardt the most reliable index of the involvement of any region is to be attained by careful examination of the school population. The maximum frequency in the goiter areas is found to occur after the ninth year of age; in later years it diminishes. The significance of examinations of schoolchildren is brought into bold relief by quoting the figures for the more or less serious enlargement of the thyroid in the school population of circumscribed geographic areas. Thus at Erlangen it involves only 6 per cent.; at Traunstein in Upper Bavaria, 57 per cent.; at Erlau in Lower Bavaria, 77 per cent.

The detailed investigations of Bircher, who has attempted to correlate the frequency of endemic goiter with certain geologic formations, are more or less familiar to all students of the subject. Not only the superficial geologic relations, but also the stratigraphic features of different regions have been drawn into consideration in the discussion of this phase of the matter.

1. Schittenbelm, A., and Weichardt, W.: Der endemische Kropf mit besonderer Berücksichtigung des Vorkommens im Königreich Bayern, J. Springer, Berlin, 1912.

The newly available Bavarian statistics have now been analyzed, as have been other data from Norway and elsewhere, to ascertain to what extent, if at all, there is scientific justification for the belief that the rocks as such or the chemical or organic peculiarities of the soils of definite geologic origin are correlated with endemic goiter. The Bavarian report referred to concludes that geologic formation is not the primary or determining factor in the endemic distribution of goiter. The belief is further ventured that the etiologic factor is to be sought in water the composition of which may, of course, be indirectly modified by rock and soil conditions.

The association of goiter with drinking-water is not new.[2] The stories of the goiter-producing waters of India and the immunity of those persons who avoid them, and the classic experiment of Bircher in the Swiss commune of Rupperswyl, where the introduction of a water-supply from a non-goitrous region was followed by a gradual drop in the proportion of goitrous school-children, are frequently quoted to support the contention that the cause of goiter is in drinking-water. Lately a type of thyroid hyperplasia in fishes has been found in "infected" fish-ponds.

The incidence of endemic goiter among children of school age recalls observations made on an epidemic form of thyroid hypertrophy prevalent in Brazil as the outcome of trypanosome infections. In the infected regions many cases of cretinism and infantilism developed, and it was principally children that were subjected to the malady. From such analogies and the facts earlier cited, Schittenhelm and Weichardt have developed the view that in goitrous regions the noxious agent (whatever it may be) may reach most of the population alike; but the majority acquire a sort of immunity. From this point of view the young would be expected to show greater susceptibility; and as a matter of fact it is known that it is the young who are peculiarly liable to develop goiter on being transferred from goiter-free districts to those involved.

It is too early to value correctly the various claims of immunity made for boiled waters and filtered waters in goiter regions. The strictly experimental study of the etiology of endemic goiter has scarcely been begun. Nevertheless it may not be amiss to venture the belief that, as a purely tentative hypothesis, the existence of a transmissible infective agent according well with many of the epidemiologic and biologic features of the disease, is by no means unlikely. Strong objections have been raised against the probability of a living agent as the cause of goiter; and it has been pointed out that the alleged infection does not tend to be progressive or self-propagating. But the unsuspected possibilities of acquired immunity must be taken into account and we must become prepared to recognize novel forms of latent infection. The situation ought to be faced with the weapons of modern experimental preventive medicine.

2. Compare McCarrison's Researches on Goiter, editorial, THE JOURNAL A. M. A., Aug. 10, 1912, p. 449.

FACTORS AFFECTING THE COMPOSITION OF MILK

In a recent issue of THE JOURNAL[1] the influence of the stage of lactation on the quality of the milk of dairy cattle was commented on. In addition to this factor there are other known causes of variations, notably the breed of the animal, the individuality and to some extent the feed, the interval between milkings, and the temperature and weather conditions. It is also known that the first and last milk drawn differ in composition. We have already pointed out that when a large supply of milk furnishes the source for the use of the individual any considerable variations in composition are likely to disappear, the average mixed product from many animals representing a fairly uniform food. These are the conditions which obtain in larger cities, where dairy companies sell the output from many farms. The uniformity is further preserved by the fact that it is quite common for a particular breed of cattle to form the prevailing type in the separate dairy localities, thereby obviating the chance for the more extreme inequalities represented by widely differing breeds. Whenever the milk supply is derived from a smaller herd or from a few selected cows, possibilities of daily variations and even changes from milking to milking are not unlikely to arise, bringing problems of immediate importance in the more refined practice of infant-feeding. There are other technical reasons for desiring reliable information regarding the variations in cow's milk; but neither these nor the conflicting claims of the breeder enthusiasts who represent the various types of cattle such as the Holsteins, Jerseys, etc. need concern us here.

A recent compilation,[2] including all complete analyses of the milk of pure-bred animals for the entire lactation periods published up to the present by American experiment stations, corroborates the generally accepted assumption regarding the variations in fat content due to breed. Among the more familiar breeds, namely, Jersey, Guernsey, Ayrshire, Holstein and Shorthorn, the average percentage of solids is highest with the Jersey and lowest with the Holstein. The fat represents 35 per cent. of the total solids with the Jersey breed and 28 per cent. for the Holsteins. What is not so generally known is that the breed also exerts a decided influence on the protein content. The individuals and breeds, such as the Jersey, having the higher percentage of fat have at the same time a higher percentage of protein. The proportion of the total protein present as casein does not seem to bear any special relation to the breed; but the ratio of casein to fat varies uniformly with it. The nature of the fat is undoubtedly influenced by the feed of the animal, while the sugar content gives little

1. Cow's Milk and the Stage of Lactation, editorial, THE JOURNAL A. M. A., Feb. 22, 1913, p. 596.

2. Eckles, C. H., and Shaw, R. H.: The Influence of Breed and Individuality on the Composition and Properties of Milk, Bureau of Animal Industry, Bull. 156, 1913. This bulletin can be obtained from the Government Printing Office in Washington at 5 cents per copy.

indication of variation with either the breed or the individual. The accompanying new comparative data representing the most recent statistics available may be of value to some of our readers:

	Total Solids Per Cent.	Fat Per Cent.	Protein Per Cent.	Sugar Per Cent.
Jersey	14.70	5.14	3.80	5.04
Guernsey	14.49	4.98	3.84	4.98
Ayrshire	12.72	3.85	3.34	5.02
Holstein	12.00	3.45	3.15	4.65
Shorthorn ...	12.57	3.63	3.32	4.89

Comparisons of morning and evening milk justify the statement that although the fat content may show some small variations depending mostly on the individual, in general the composition of the milk-plasma does not seem to vary appreciably when the intervals between the milkings is the same. The relative richness in fat of the last milk drawn and commonly known as strippings, in contrast with the foremilk from the same cow, is sometimes very striking. With cows producing large quantities of milk the strippings may contain from three to ten times as much fat as the first milk drawn.[3] The inequalities are confined solely to the amount of fat present, the plasma remaining practically the same in composition. The larger size of the fat globules in the last milk drawn and the general increase in their size from foremilk to strippings is perhaps accounted for on the assumption that larger fat globules are held back in the small ducts more readily than the smaller droplets. These general considerations may also apply to the milks of other species, and need to be taken into account in all sampling of milk for the purpose of analysis.

MISAPPREHENSION AS TO THE NOVELTY OF THE FRIEDMANN TREATMENT

In view of the newspaper sensation caused by the announcement by Dr. Friedmann of another "cure" for tuberculosis, it would seem well to review some of the facts previously known. Even editors of medical journals, who should be conversant with the history of medicine and of tuberculosis, have been led into grave error. For example, a recent editorial in a medical journal, from which the *Literary Digest* quotes,[1] makes the statement that "Friedmann came to the conviction that the most potent curative and immunizing powers lie in the living bacterial organism itself, and not in the dead organism as used in the method of Wright and his school." The editorial says further, "Our own impression from the entire debate is that Friedmann has enunciated a principle of far-reaching consequence and has probably discovered a remedy that influences tuberculosis favorably." The effect of this editorial is to credit to Friedmann the discovery that in order to produce immunization against tuberculosis living cultures are necessary. For the truth of medical history as well as the credit of American physicians it is well to point out some of the things which were done years ago.

In 1892 and 1893, Trudeau[2] of Saranac Lake demonstrated the fact that subcutaneous inoculation of living cultures of the avian tubercle bacillus greatly increased the resistance of rabbits against infection by virulent mammalian cultures. He immunized rabbits to such an extent that when they were inoculated with virulent cultures, the inflammatory reaction gradually disappeared, leaving the eye in the normal condition, while in control animals the destruction of the eye was complete. As far as we have been able to discover, Trudeau was the first to announce the principle that living cultures must be used in order to produce an efficient immunity against tuberculosis.

De Schweinitz[3] in 1894 immunized animals with human tubercle bacilli which had been cultivated for twenty generations on slightly acid broth. At the end of this time the cultures were not virulent for guinea-pigs, but were capable of immunizing these animals to such an extent that they resisted infection with the bovine germ. Control animals died in seven weeks.

Pearson and Gilliland[4] demonstrated that human tubercle bacilli which were not virulent for cattle would produce a high degree of immunity when injected into the circulation. In 1905 the same authors[5] demonstrated a strong curative action on tuberculosis from injections of non-virulent tubercle bacilli derived from human beings.

Webb and Williams[6] demonstrated that immunity against tuberculosis could be produced by the inoculation of living tubercle bacilli, beginning with small doses and gradually increasing.

If we go to foreign publications it is easy to multiply instances of the use of living cultures. In 1901 McFadyean[7] not only demonstrated his ability to produce immunity in cattle by the use of living cultures, but also in one case treated an animal which was already tuberculous. The animals resisted for a long time injections of tubercle bacilli of proved virulence for cattle.

In 1901 von Behring announced his method of bovo-vaccination, the first detailed publication[8] of which appeared in 1902. Living cultures were used.

In 1903 Thomassen[9] reported experiments in which by the intravenous injection of human tubercle bacilli into young cattle he produced a considerable degree of immunity.

3. The justification for this and other statements is derived from Eckles, C. H., and Shaw, R. H.: Variations in the Composition and Properties of Milk from the Individual Cow, Bureau of Animal Industry, Bull. 157, 1913.

1. Literary Digest, March 1, 1913, p. 451.

2. Trudeau: New York Med. Jour., July 23, 1893.

3. De Schweinitz: Med. News, Dec. 8, 1894.

4. Pearson and Gilliland: Philadelphia Med. Jour., Nov. 29, 1902.

5. Pearson, L., and Gilliland, S. H.: Effect of Tuberculosis Vaccination on Cattle Infected with Tuberculosis, Univ. Penn. Med. Bull., April, 1905.

6. Webb and Williams: Jour. Med. Research, xx, No. 1, xxiv, No. 1.

7. McFadyean: Jour. Comp. Path. and Therap., June, 1901, March, 1902.

8. Von Behring: Beitr. z. exper. Therap., 1902, No. 5.

9. Thomassen: Rec. de méd. vet., Jan. 15, 1903.

Vallée[19] reported experiments in which young animals were rendered highly immune against virulent bovine infection by the use of non-virulent living cultures derived in the first instance from a horse.

Instances could be multiplied, but these are enough to demonstrate that Friedmann has not discovered or announced any new principle in regard to the immunization against tuberculosis. As far as our knowledge goes, he has followed methods which were demonstrated first in this country, and have been confirmed by many workers in America and Europe.

The psychology of the excitement of the public over Friedmann is hard to understand except on the basis of clever press-agent work. Practically every fact which he has brought forward has been known for years. Why the bacillus from the turtle should possess special curative value for the human being is a mystery, although, of course, it cannot be denied that it is within the range of possibility that such a thing may be true. The point of scientific interest that should be made clear, however, is that he has discovered no new principle, at least as far as the published communications go. The principle of using slightly virulent cultures derived from another species was demonstrated by Trudeau in 1891 and 1892. The principle of intravenous injection for the best production of immunity against tuberculosis was demonstrated by Pearson and Gilliland and others in 1902. It seems, then, that if he has discovered anything at all it is only a culture which possesses unusual immunizing powers for human beings.

Practically, of course, the point of interest is in the question whether or not a harmless and clinically efficient immunizing culture has actually been worked out. On this point we still await authoritative tests, for we have no information that Dr. Friedmann has yet submitted his treatment to investigation by competent and unprejudiced experts in the treatment of tuberculosis. The announcement that he has agreed to submit his method to be tested by the New York City Department of Health and by the Public Health Service will, perhaps, be viewed with natural skepticism until the test has actually taken place, in view of the fact that he withdrew the offer to submit the treatment to his own government. If it proves its worth under adequate, unbiased scientific investigation, the medical profession, of course, will be only too glad to forget the unfortunate features in its exploitation which have raised a presumption against its worth. Until then, the public and the profession alike may be pardoned for remembering that a patent was applied for and the treatment advertised before its value was established; that as yet we have the word of no one who has actually tested it except Dr. Friedmann and his assistants or associates and, finally, that, although there is no lack of clinical material in Germany, he has chosen to bring it to America first from no other apparent motive than pure commercialism.

19. Vallée: Ann. de l'Inst. Pasteur, August and September, 1909.

Current Comment

FAIR PLAY FOR DR. FRIEDMANN—AND FOR THE PUBLIC

One of the most useful functions of newspapers is to call public attention to public injustice. Occasionally, however, it is proper to inquire if the admirable zeal displayed in this good cause has not been hastily misapplied. For instance, Dr. Friedrich Franz Friedmann of Berlin is plaintively asking for a fair field in which to demonstrate his treatment for tuberculosis; one or two newspapers have at once sprung to champion his cause and are inquiring why Dr. Friedmann cannot be accorded fair play. Why, they ask, can he not be allowed a chance? Before answering this question, it is well to find out whether or not Dr. Friedmann has been denied fair play in any particular. In parenthesis, it may be remarked that, if all Dr. Friedmann wanted was a chance to demonstrate his treatment, he did not need to cross the ocean; indeed, his action in withdrawing his treatment from test by his own government accords somewhat strangely with his pose of unheeded and unjustly treated discoverer. Let that pass. Being on this side of the water, he presumably wishes either to submit his treatment to investigation by competent and unprejudiced practitioners, or to employ it himself—under such conditions, of course, if he is acting in good faith, as will permit his colleagues to form an adequate opinion of it. If he wants the first-mentioned opportunity — merely to have his treatment investigated under proper conditions — the Public Health Service has offered to give it ample clinical test after demonstration of its harmlessness. If, on the other hand, he wishes to employ it himself in New York, he has merely to present the proper credentials and pass an examination to prove his fitness to practice, as any other physician would be obliged to do. This, to be sure, would require time; but even this difficulty is not insurmountable, for the New York law contains a special provision for granting a license, under extraordinary circumstances, without the usual formalities. The New York authorities have signified their willingness to recognize extraordinary circumstances in this case provided Dr. Friedmann demonstrates the value of his method, and have stated that he is at liberty to make such demonstration in the New York City hospitals. We fail to see, therefore, that any unfairness is being shown Dr. Friedmann; on the contrary, he seems to us to be receiving the largest opportunity that any discoverer could desire for the demonstration of his treatment. It appears, moreover, that the newspapers which have hastily assumed that Dr. Friedmann is being unjustly treated have missed an important point — indeed, the important point in the whole matter: What about justice to the public? Would it be fair or just to the throngs of tuberculosis sufferers, excited by hope of a "sure cure," to facilitate their unlimited experimentation and exploitation by an unknown and perhaps dangerous method? It would not; and justice to the public, while not incompatible with justice to Dr. Friedmann, is, after all, the paramount consideration.

PEORIA CONFERENCE ON CHILD WELFARE

The February number of the *Child-Welfare Bulletin* of the Child-Welfare League of Peoria, Ill., is an interesting exemplification of the good work being done by local child-welfare associations throughout the country. The league publishes a monthly bulletin, and the February number contains a report of the midwinter conference. The program included papers and discussions on pure milk by physicians, dairymen, the citizen consumer and members of the health board, and covered the question of pure milk from the several points of view of these different classes of citizens. The interesting bulletin is distributed free on application to the league and should be valuable to other organizations.

COOPERATIVE CLINICAL INVESTIGATION OF INFECTIOUS DISEASES

The opening of the Durand Hospital for Infectious Diseases, Chicago, referred to in our News Department, is worthy of special mention, if only because such a hospital helps to supply facilities for caring for those afflicted with contagious diseases — unfortunates who are nearly always refused admission to general hospitals. But the event deserves notice for two other reasons. The hospital building, together with a substantial annual income, is turned over to the Memorial Institute for Infectious Diseases, the latter, as is well known, having for its prime object research, aiming to increase the knowledge as to the nature and cure of infectious diseases. The hospital, therefore, has for its fundamental object research and education — a combination so rare in this country as to merit approving comment. The other fact worthy of note is the spirit of cooperation between those having in charge the Durand fund and those managing the affairs of the Memorial Institute. It was recognized that with the money available by the Durand bequest it was possible to erect a hospital, but not adequately to equip or to run it. Through union with the Memorial Institute, however, the way was clear for utilizing the building for the highest purposes. Thus Dr. Hektoen and his associates will have greatly increased opportunities for productive work in this special field of scientific medicine.

A TRAVELING HOSPITAL FOR RURAL NEEDS

C. W. Stiles[1] asserts that a pressing need of our rural districts is the hospital treatment which is open to even the poorest inhabitants of our city slums. He finds the need for such treatment particularly urgent in gynecologic and pediatric cases. The average mother with whom he comes in contact in field work is attended in her confinements, rarely by a physician or a trained nurse, usually by some of the neighbors or a dirty and ignorant midwife, with the result that injuries frequently occur which are never properly treated. He also finds large numbers of children who are handicapped in their physical and mental development by large tonsils and adenoids, and by defective eyes and teeth. He says, moreover, that the average country woman (white or black) with whom he comes in contact has exceedingly rudimentary ideas on cooking, housekeeping and care of children and the sick, and to meet the needs of this side of the problem the district nurse would be invaluable. The remedy which he proposes for these evils is a traveling hospital, equipped for the minor surgical work on children suggested above and for the repair of obstetric injuries or gynecologic ailments. He believes that it would be a comparatively simple matter to fit out a special hospital train of from three to six cars and take it to districts without hospitals. The difficulties to be overcome in establishing these trains are not insurmountable, and the expense need not be greater than that connected with any other hospital. The traveling hospital could also be utilized to bring about such results as much-needed postgraduate medical instruction to local physicians, ideas on cooking, housekeeping, infant-feeding, etc., to mothers, ideas on sanitation to the fathers, and special instruction along health lines to the schools. Stiles believes that this work is more important than the teaching of the farmers by special school trains how to increase their crops or how to take care of their live stock. The suggestion is the more valuable coming from Stiles, as he has had practical experience on laboratory trains in the rural districts in which research and observations were made on school children. This has shown him the need, the practicability and the possibilities of such a hospital train as he suggests.

1. Stiles, Charles Wardell: Pub. Health Rep., Jan. 31, 1913.

PRESIDENT PRITCHETT'S REPORT ON MEDICAL EDUCATION

An article worthy of careful reading is that part of President Pritchett's annual report to the board of trustees of the Carnegie Foundation for the Advancement of Teaching which deals with the progress of the year in medical education.[1] Basing his statements on the investigations made by the foundation in both Europe and America, he calls attention to the widely differing conditions found in this country as compared with the countries of Europe. He shows that while European medical schools — for example those of Germany — hold to equally high standards, those in this country range from the highest to the very lowest standards, these extremes often appearing in the same city. Another striking difference is the attitude held by many universities toward their medical departments, the education in the latter being in many instances on a decidedly lower plane than that given by the same universities in their departments of liberal arts. Pritchett refers also to the unfortunate optimism with which even some of the humblest medical schools believe they are offering an education somehow superior to that given in even our best medical schools. On the other hand, the report points to many concrete evidences of progress. The number of medical schools has been greatly reduced, while at the same time those remaining have been largely improved in their standards of admission and in their internal development. Pritchett shows that much of the progress made has been due to the publicity given by the American Medical Association and by the Carnegie Foundation to the actual conditions existing throughout the country. Much credit for the marked improvements is given to the work of the Council on

1. This issue, p. 743.

Medical Education of the American Medical Association. It is doubtless true, however, that a large part of this credit is due to the Carnegie Foundation for the thoroughness of its work and the wide publicity given to its reports.

THE TOXICITY OF ALDEHYDS

In a recent number was published a greatly needed warning of the dangers of formaldehyd,[1] which is coming into wide-spread popular use, with not infrequent disastrous results. Although formaldehyd is the most-used aldehyd, there are others which are not so generally known, and which may at times cause serious harm. Thus, Kunkel observed in persons working in acetic acid manufactories an extensive overgrowth of connective tissue in the liver, and sclerosis of the arteries, which he ascribed to chronic intoxication with aldehyds. Recently O. Loeb[2] has investigated the effects of a large number of aldehyds on experimental animals, and found that aldehyds of the fatty acid series generally cause arterial changes in rabbits, entirely similar to the experimental arteriosclerosis produced by epinephrin. Aldehyds of the aromatic series, although toxic, have not this effect on the arteries. It is thus evident that the anatomic effects here exhibited are dependent on the chemical structure of the agent, which introduces an interesting principle of pharmacology and toxicology. Evidently aldehyds are dangerous things, and formaldehyd may not limit its effects to the skin and respiratory passages, but, as Loeb's studies indicate, may cause deeper-seated changes if it acts for a long enough time or in sufficient doses. It certainly is not a proper substance for indiscriminate use, yet we observe more and more frequently its pungent, irritating vapors in public vehicles, water-closets, etc., which are presumably being "disinfected" while in use.

HIGHER PRELIMINARY QUALIFICATIONS ASSURED

Recognizing the need of a better preliminary training for those who are to study medicine than that furnished by the usual high-school degree, the Council on Medical Education of the American Medical Association in 1904 prepared what it termed an ideal standard for admission. In addition to the regulation four-year high-school education this standard included a year in physics, chemistry and biology, and the securing of a reading knowledge of a modern language, preferably German or French. It was suggested that this additional year's work might be taken in either a college of liberal arts or in a preliminary year given by the medical school itself. At that time, although in practically every other civilized country this higher preliminary training was required, only four medical colleges in this country were exacting anything in advance of a four-year high-school education, and for a large majority of medical schools there were practically no entrance requirements. By June 1, 1912, however, forty-five colleges had put into effect this or higher preliminary standards, and several others had adopted it to take effect in 1913 or 1914. Ten state licensing boards also had adopted one or two years of preliminary work in addition to the four-year high-school education as their minimum requirement of preliminary education. At the annual meeting of the American Medical Association in Atlantic City in June, 1912, the House of Delegates adopted a recommendation instructing the Council on Medical Education not to include in Class A (among acceptable colleges) after Jan. 1, 1914, any medical school which was not requiring for admission "not less than one year of college credits in chemistry, biology, physics and a modern language, or two or more years' work in a college of liberal arts, in addition to the accredited four-year high-school course." At a regular meeting held in Chicago last month, the Council on Medical Education adopted a resolution that the work of this preliminary year should correspond in excellence and in content at least with the freshman year's work in our standard colleges and universities. A subcommittee was appointed to prepare a detailed outline of the minimum requirements for this preliminary year's work. At its annual meeting held Feb. 26, 1913, the Association of American Medical Colleges appointed a committee with power to act, to cooperate with the committee of the Council on Medical Education in the preparation of an outline of minimum requirements for the preliminary year's work, thereby going on record as favoring this advance requirement. The general adoption throughout the country of at least one year of work in the premedical sciences, in addition to the standard four-year high-school course, for admission to the study of medicine would now seem to be assured.

1. Morgan, William E.: The Serpent's Tooth in Formaldehyd, THE JOURNAL, Feb. 22, 1913, p. 590.
2. Loeb, O.: Arch. f. exper. Path. u. Pharmakol., 1912, lxix, 114.

Medical News

ARKANSAS

New Hospital Planned.—An emergency hospital is to be erected on Eighth Street, Argenta, for the Baring Cross shops.

Personal.—A fire in the apartment of Dr. L. Parker, Devall's Bluff, February 1, destroyed the entire building.——Dr. Isaac A. Ryan, Fort Smith, fell from his buggy, January 29, fracturing his arm just below the shoulder.——The office building of Dr. W. P. Parks, Mena, was recently burned with a loss of $2,500.——Dr. C. P. Wilson, Jr., has been elected city bacteriologist of Fort Smith.

Dowling in Arkansas.—Dr. Oscar Dowling, president of the State Board of Health of Louisiana visited Little Rock with his health train, January 29-31 and during his visit made a strong appeal to the members of the Arkansas General Assembly for the establishment of a state board of health in Arkansas. During its stay in Little Rock, the train was visited by several thousand people. The closing feature of the visit was a lecture on "Health," delivered by Dr. Dowling at the High-School Auditorium. The legislature passed a unanimous vote of thanks to Dr. Dowling for his address and exhibition.——Dr. Dowling and the members of his party were entertained at a banquet, January 29, by the Arkansas Medical Society, the Little Rock Chamber of Commerce and the state and city health departments.

ILLINOIS

New Officers.—Jacksonville Medical Club, February 22: president, Dr. George H. Stacy; secretary, Dr. C. E. Cole (reelected)

Colony for Epileptics.—At meetings of 2,000 Christian Endeavor societies of Illinois, February 23, the establishment of a farm colony for epileptics, under control of the State Charities Commission, was urged.

Personal.—Dr. George F. Johnson, mayor of East Moline, expects to move to Los Angeles early in the spring.——Dr. Harry E. Kerch, Dundee, suffered a partial paralysis of the motor nerve of the right eye, recently.

Hospital Notes.—The Marion Hospital Company has been incorporated at Marion with a capital stock of $20,000, by Drs. D. D. Hartwell, L. L. Fowler and A. M. Edwards.——The St. Clair County Board of Supervisors has asked for bids for the construction of a two-story addition to the County Free Hospital, Belleville. The old building is also to be remodeled and equipped with an elevator, operating-rooms, etc., the entire cost of the improvement is estimated at $16,500.

Chicago

Jacobi and Martin Guests of Honor.—At the dinner of the Chicago Medical Society, February 26, Dr. Abraham Jacobi, New York City, and Dr. Edward Martin, Philadelphia, were the guests of honor.

Western Reserve Alumni Dine.—A dinner was given at the Hotel Sherman, February 24, by the Chicago Alumni Association of the Western Reserve University, Cleveland, to the president of the institution, Dean C. A. Hamann and Secretary F. C. Waite of the Medical School.

Personal.—Dr. William A. Gross was cut and bruised in a collision between automobiles, February 26.——Dr. and Mrs. Casey A. Wood are taking a six weeks' trip to southern California.——Dr. and Mrs. Albert H. Hoy and Miss Hoy have sailed for Europe.——Dr. and Mrs. Junius C. Hoag sailed from New York, February 25, on a cruise to the West Indies and Panama.——Dr. Henry O. Wernicke, Chicago, has been appointed house physician at the Madison (Wis.) General Hospital.

Death of Eminent Pharmacist.—Prof. Oscar Oldberg, dean emeritus of the Northwestern University School of Pharmacy, an authority on pharmaceutics and chemistry; formerly dean of the National College of Pharmacy, Washington, where he was instrumental in introducing the metric system of weights and measures in the government service; for twenty-five years professor of pharmacy and for thirty years a member of the committee of revision of the United States Pharmacopeia, died suddenly in Pasadena, Cal., February 27, from heart disease.

Durand Hospital Opened.—The Annie W. Durand Hospital of the Memorial Institute for Infecticus Diseases was opened February 27. The institution is located at York and Wood streets and for the time being will be devoted only to the care of scarlet fever cases. The exercises consisted in the transfer of the hospital from the Northern Trust Company as trustee under the will of Mrs. Durand, to the Memorial Institute, which will conduct the institution under a ninety-nine year agreement. In the absence of Dr. Frank Billings, Dr. James B. Herrick delivered the address which had been prepared by Dr. Billings, accepting the hospital on behalf of the Memorial Institute. The building and equipment are valued at about $400,000 and a laboratory for infectious disease research is to be established on land acquired immediately north of the hospital, The staff of the hospital is as follows: consulting physician, Dr. Ernest E. Irons; consulting surgeon, Dr. Dean D. Lewis; consulting otolaryngologist, Dr. S. A. Friedberg; physicians, Drs. George H. Weaver and E. C. Rosenow; resident physician, Dr. George F. Dirk, and intern, Dr. Morris Fishbein.

INDIANA

Appropriation for Medical School.—The Indiana legislature has made an appropriation of $65,000 for the Medical School and Hospital of the Indiana University School of Medicine for the first year, and an annual appropriation of $75,000 thereafter.

Personal.—Dr. Charles A. Daugherty, South Bend, who has been suffering for a considerable time from what was supposed to be inflammation of the gall-bladder, was operated on at Augustana Hospital, Chicago, February 25, but on opening the abdomen, conditions were found which rendered further procedure inadvisable.——Dr. James H. Taylor, Indianapolis, stepped from a street-car in front of an automobile, February 14, and was run down and painfully injured.

LOUISIANA

Personal.—Dr. Wiltz M. Ledbetter, formerly city physician of Shreveport, underwent operation for appendicitis, February 24.——Dr. Joseph A. O'Hara, New Orleans, coroner of Orleans Parish, who has been ill in Touro Infirmary, is reported convalescent.——Dr. O. L. Pothier, New Orleans, head of the pathologic department of the Charity Hospital, has resigned.

Clinic Superintendent Dies.—Louis Remon Jauquet, for twenty-six years superintendent of the Eye, Ear, Nose and Throat Clinic, New Orleans, "a friend to man, who devoted his life to good," died at his home, February 7, aged 62.

Legal Proceedings Against Leper Suspect.—Dr. Paul Thibodaux, health officer of Donaldsonville, has taken legal proceedings against a leper suspect of McElroy, who is said to be engaged in business in that town, praying that he be committed to the leper home in Iverville Parish, as provided by law.

KENTUCKY

New Hospital.—Dr. E. S. Stuart, Fairview, has given $25,000 to erect and equip a hospital in Hopkinsville for the benefit of the city and Christian County. The institution will be known as the Jennie Stuart Memorial Hospital and the erection of the building will be commenced as soon as a lot can be secured and plans approved. One-fourth of the capacity of the institution is to be reserved for charity patients.

Work of Registrars.—The following is from the chief statistician of the Census Bureau, Washington, to the Kentucky State Registrar of Vital Statistics: "Through newspaper reports, the bulletins of the state boards of health and personal conferences, I have learned of the kind of health work the local registrars of Kentucky are doing. It is shown that they not only endeavor to secure complete records of births and deaths, but, acting under the authority of the Kentucky vital statistics law, they report epidemics of typhoid, diphtheria, measles, infantile paralysis and other communicable diseases and aid actively in distributing literature, and in other ways, limit the spread of these diseases. By so doing the registrars of Kentucky have succeeded in putting into actual practice the purpose of such a law; that is, to preserve and conserve the health and lives of the people. It is my purpose to call the attention of the local registrars of the other twenty-one of the United States under this registration law to the work done by the registrars of Kentucky, that the greatest good may be secured from its operation."

MARYLAND

Baltimore

Lectures on Animal Psychology.—John B. Watson, Ph.D. professor of psychology in Johns Hopkins University has been selected by the Department of Psychology of Columbia University to deliver at that institution a course of eight lectures devoted to the study of animal psychology.

Personal.—Dr. Sidney R. Miller on returning to his home in Windsor Mills, near Baltimore, February 26, surprised two burglars, who escaped with jewelry valued at $500 and $45 in money.——Dr. George Walker has been appointed a member of the State-Wide Vice Commission.——Dr. Thomas J. O'Donnell is ill with influenza in St. Joseph's Hospital.

Field Hospital Established.—Company A, Hospital Corps, N. G. Md., became Field Hospital No. 1, February 20. This organization has met the requirements of the Dick bill that sanitary troops shall be separate and distinct units. The equipment of the field hospital is at present stored in the Howard Street Armory.

Medical Missionary News.—Dr. Charles W. Young, professor of bacteriology and pathology in the Union Medical College, Peking, China, and Dr. and Mrs. G. W. Guinter, missionaries of the Presbyterian Board in the Soudan, Africa, are visiting in Baltimore.——Dr. Mary Baer, superintendent of the hospital at Charila, India, is under treatment in Baltimore for an infected and crippled left arm.

Phipps Clinic Opening.—The ceremonies connected with the opening of the Phipps Psychiatric Clinic will begin April 16 and continue through three days. Among the distinguished guests who will deliver addresses are Sir William Osler and Prof. William McDougall of Oxford, Frederick W. Mott, F.R.S., of London, Professor Heilbronner of Utrecht, Professor Bleuler of Zurich and Prof. Orovino Rossi of Italy.

MASSACHUSETTS

Examination for Bacteriologist.—The Massachusetts Civil Service Commission will hold a competitive examination, March 18, for a male bacteriologist in the Health Department of Boston with a salary of $1,200 a year.

Personal.—Dr. Luke Corcoran has been reappointed a trustee of the Northampton State Hospital.——Dr. Francis X. Mahoney, Boston, has been reappointed a member of the

Boston Health Board.——Dr. Edna M. Childs, Boston, has been appointed laboratory assistant in the Consumptives' Hospital.

Remedied Defects.—Dr. William J. Gallivan, chief of the Child Bureau of the Boston Board of Health, reports that the physical examinations of 30,331 school children have been reported to him since last September. Of these 17,233 were last year found to be defective, but, since the examination a year ago, 9,245 of these 17,233 have had their defects remedied.

Long Island Hospital.—The trustees of the infirmary department of the city of Boston have submitted plans for the improvement of the institution which if carried out will make this one of the best in the country. Alterations of the present building, new hospital pavilions, dormitory, nurses' home, kitchen building, tunnels, etc., involve an expenditure of about half a million dollars.

More Graduate Courses.—Further Massachusetts General Hospital courses offered to graduates in medicine are in "Medicine and Pathology" by Drs. William H. Smith, Roger I. Lee, and Oscar Richardson, Wednesdays in March and April from 3:30 to 5:30 p. m., and in "Orthopedic Surgery of Adults" by Dr. E. G. Brackett and his associates, Thursdays in March and April at 10:30 a. m.

Centennial of Hospital.—February marked the one-hundredth anniversary of the founding of the Massachusetts General Hospital. In February, 1813, the hospital received from the state the gift of Province House, valued at $40,000 and some cut stone worth $35,000. This is said to be all the assistance that has been given the hospital by the commonwealth during the past century. During the last year 6,629 patients were admitted to the institution. There were 22,029 new cases and 136,095 visits were made in the out-patients department.

NEW JERSEY

Health Board Election.—At the annual meeting of the Health Officers Association of New Jersey, held in Trenton, January 4: Dr. F. W. Sell, Rahway, was elected vice-president, and Drs. Alton S. Fell, Trenton; A. C. Benedict, South Orange, and Edward Guion members of the executive committee.

Medical Library Association Formed.—At a meeting of the physicians of Elizabeth, the Medical Library Association of Elizabeth was organized and the following officers were elected: president, Dr. J. P. Reilly; vice-president, Dr. Charles H. Schlichter, and secretary-treasurer, Dr. George Knauer.

NEW YORK

Diphtheria in Poughkeepsie.—There has been an outbreak of diphtheria in Vassar Brothers' Hospital, Poughkeepsie, which has made it necessary to place one ward of the hospital under quarantine.

New Hospital for Southampton.—The cornerstone of a new hospital for Southampton, L. I., which will cost $50,000, was laid February 22. The funds for the building have been raised entirely by popular subscription.

Personal.—Dr. J. O. Polhemus of Nyack was tendered a dinner on the occasion of his seventy-ninth birthday, February 26, by the staff of the Nyack Hospital.——Dr. John W. Russell, superintendent of the Matteawan State Hospital, resigned February 27.——Dr. James G. Hunt, Utica, has been appointed local surgeon for the New York, Ontario and Western Railroad.——Dr. Reid Gilmore has been appointed school physician, and Dr. F. E. White, city physician, of Schenectady.

State Should Aid Tuberculosis Fight.—The State Board of Charities has issued a formal statement to the effect that the state should establish district hospitals for the care of incipient and curable cases of tuberculosis. The board believes that it is absolutely necessary for the state to put forth much greater efforts looking to the relief of suffering and the prevention of the spread of contagion if the disease is ever to be overcome. These proposed district hospitals should be on the Ray Brook plan and the care of less promising and advanced cases should be left to local authorities. This plan would permit of enlarged facilities for the care of all classes of tuberculosis patients, and of a most desirable classification which it now seems impossible to secure in the smaller local institutions.

New York City

Personal.—Dr. Arthur S. Calman, house surgeon of the Lebanon Hospital, is in a very critical condition as a result of blood-poisoning from a small cut inflicted during an operation.——Dr. I. L. Nascher has been appointed professor of geriatrics in the College of Physicians and Surgeons, Boston.——Dr. William P. Healy has been reelected president, Dr. Albert F. Burgman, vice-president, and Dr. Alexander Nicoll, secretary of the medical board of Fordham Hospital (Bellevue and Allied Hospitals).

Child Welfare Exhibit.—The Child Welfare League is holding an exhibit in the interest of the thirty-two bills recommended by the Factory Investigating Committee at the Frances Building, 667 Fifth Avenue. Conferences are held at 4 p. m. daily, at which well-known welfare workers discuss the new measures and explain why their passage is necessary.

Diphtheria in School.—An outbreak of diphtheria in Public School 16, Williamsburg, has led to the closing of two class rooms by the Board of Health. There was a similar outbreak of diphtheria in the same school about a year ago and authorities are blaming the unsanitary condition of the building, especially the shutting off of light and air due to the erection of high buildings, for these outbreaks.

Amendments to the Sanitary Code.—The Board of Health has amended the Sanitary Code so as to require that after July 1, 1913, cream sold in New York must be produced from either grade A or grade B milk and that nuts, figs and dates used in making candy must be as good as when offered for sale without the candy combination. The object of this amendment is obviously to secure purer ice cream and candy. Another amendment requires that eggs known as "spots" shall be denatured as soon as discovered, thus making it impossible to sell them for food as has frequently been done. Still another provision makes it a misdemeanor to keep offensive fats, meat trimmings and bones in markets, hotels and restaurants. They are to be considered as garbage and if not disposed of at once will be seized and carted away by the city.

OHIO

New Officers.—Union Medical Association of the Sixth Councilor District at Akron, February 11: president, Dr. H. Blankenhorn, Orrville; secretary, Dr. J. H. Seiler, Akron (reelected for the thirteenth time).

Request that Occupational Diseases Be Reported.—Under the Thomas Bill, recommended by the Committee on Public Health, physicians will be requested, but not required, to report to the State Board of Health, all occupational diseases coming under their observation.

Hospital Notes.—Of the $150,000 required for the building fund of St. John's Hospital, Cleveland, $126,588.25 had been secured two days before the time for closing subscriptions.——On March 11 a campaign will be begun to raise $100,000 necessary to free St. Anne's Infant and Maternity Hospital, Cleveland, from the debt incurred three years ago.

Personal.—Dr. J. C. Lincoln, probate judge of Wood County for two years and a practitioner of Bowling Green for forty years, has closed his office and retired.——Dr. Herbert H. Bown, Pleasant City, has returned after a five months' trip to Europe.——Dr. James E. Welliver, Dayton, who has been ill with pneumonia, is reported to be improving.——Dr. J. Valentine Koch has been appointed assistant to the superintendent of the Dayton State Hospital.——Dr. R. G. Perkins, professor of hygiene in Western Reserve University, Cleveland, has been appointed city bacteriologist, vice Dr. W. T. Howard, resigned.

Cincinnati

Antituberculosis League Meeting.—At a recent meeting of the board of trustees of the Cincinnati Antituberculosis League, Dr. Samuel Iglauer was elected president and Drs. E. W. Mitchell and H. Kennon Dunham were elected vice-presidents.

Personal.—Dr. Samuel E. Allen, otolaryngologist of the Cincinnati Hospital has resigned.——Dr. A. C. Bachmeyer has been appointed assistant superintendent of the Cincinnati Hospital.——Dr. Alfred Friedlander has succeeded Dr. Allyn C. Poole as senior pediatrician to the Cincinnati Hospital.——Dr. Foster J. Boyd has been appointed physician to the Municipal Tuberculosis Hospital. Dr. Charles S. Rockhill, superintendent, will soon give up his private practice and reside at the hospital.——Dr. Lewis Heizer has been appointed chief medical inspector of schools.

Deprecate Commercialism in Tuberculosis Cures.—The following resolutions presented by Dr. George B. Orr have been adopted by the Cincinnati Academy of Medicine: "That the members of the Cincinnati Academy of Medicine ask the medical profession of America not to recognize any man or woman as a member of our profession, be he or she a native or foreigner, who possesses knowledge or material which will cure

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tuberculosis, who does not impart that knowledge voluntarily and give of that material free of monetary consideration to his brothers in the profession, without being asked for them; and who does not do this without delay in order that many human lives may be saved thereby. Be it further resolved, That the entire medical profession of the country be called upon to do this."

PENNSYLVANIA

State Responsible for Criminal Insane.—The Supreme Court has just rendered a decision to the effect that the state and not the county should pay for the maintenance of the criminal insane who are confined in the State Hospital at Norristown, Montgomery County. This decision means a saving of $4,000 yearly.

Personal.—Dr. Phoebe H. Flagler Hagenbach of Stroudsburg celebrated her eighty-first birthday, February 25. She has practiced medicine for the last thirty-four years and is a member of the Lehigh, Lycoming and Monroe County Medical societies.——Dr. E. L. Meyers, Wilkes-Barre, was seriously injured when his automobile plunged over an embankment, February 25.——Dr. R. W. McCafferty, physician to the Glen Mills School for Boys, has resigned.——Dr. N. Bell Drake has been elected a director and is to continue as superintendent of the Ellwood City Hospital.

Hospital Notes.—Application has been filed in the prothonotary's office for a charter for a hospital in Carlisle to be called the Carlisle Hospital. This application has been signed by the physicians of the city and is the result of a movement recently started by them to provide a hospital for Carlisle and Cumberland County.——The new hospital car of the Pennsylvania system, which is to be used in case of accident and is fully equipped with beds and emergency appliances, has been placed in service.——The trustees of the Scranton State Hospital have asked for an appropriation of $240,762.60.

Vaccination Commission Reports.—The Pennsylvania State Vaccination Commission, which was authorized by joint resolution of the General Assembly, June 14, 1911, and appointed several months later by the governor, has held a number of sessions covering the period of nearly two years, has heard fifty-eight witnesses, thirty of whom were physicians and has prepared two reports, one signed by the majority of the commission setting forth its findings in favor of vaccination and a minority report from those opposed. The commission will hold a final meeting on March 12, when the two reports will be formally signed for presentation to the legislature and the governor on the following day. The commission is composed of the following members: Emil Rosenberger, president of the Real Estate Title Insurance and Trust Co., chairman; Dr. William M. Welch, Philadelphia; Dr. Jay F. Schamberg, Philadelphia; Henry C. Lippincott, John Pitcairn, Porter F. Cope and Edward A. Woods, Pittsburgh.

Philadelphia

Hahnemann Plans Extension of Course.—Anticipating the new state law beginning Jan. 1, 1914, all graduates of medical schools in Pennsylvania will be required to complete a four-year course of study and then to serve for one year as intern in a hospital, the authorities of Hahnemann are preparing to begin an advance administration this fall. Their purpose is a six-year course of study and practical work. It is planned to add a college course including biology, chemistry, physics and modern languages other than English. It will be called the first-year course and will take the place of the course that first-year men heretofore have been obliged to take in some other school.

Adopts Higher Standard.—Of the Philadelphia medical schools, the Jefferson Medical College, the Medico-Chirurgical College, the Hahnemann Medical College and the Woman's Medical College have now gone on record as adopting the higher preliminary qualifications for medical students. In addition to completing the work in an accredited high school, the student will be required to take a year's work devoted to college courses in physics, chemistry, biology and a modern language aside from English. Some of the colleges are planning to give the work themselves in a year preliminary to the regular medical course. The University of Pennsylvania for three years now has been requiring for admission, two years of college work including the sciences above mentioned.

SOUTH CAROLINA

New Officers.—Aiken County Medical Association at Aiken, February 21: president, Dr. R. M. Hammond, Montmorenci; secretary-treasurer, Dr. M. H. Wyman, Aiken.——Chester County Medical Society at Chester: president, Dr. W. M. Love; secretary, Dr. J. G. Johnston, both of Chester.

Personal.—Dr. George T. Tyler has opened a hospital for surgical cases at Greenville.——Dr. W. J. Houseal, Newberry, appointed by the governor, superintendent of the State Hospital for the Insane, has refused to accept the appointment and Dr. J. W. Babcock, Columbia, remains in that position.

TENNESSEE

Medical Library Planned.—The Memphis and Shelby County Medical Society is raising a library fund. Its plan is to install a library in the downtown portion of the city where members of the society and the profession may rapidly gain access to the books and periodicals.

New Officers.—Carroll County Medical Society at Huntingdon: president, Dr. G. C. Bryant, McLemoresville; secretary, Dr. B. C. Dodds, Huntingdon (both reelected).——Mountain City Academy of Medicine and Surgery at Chattanooga: president, Dr. O. W. James; secretary, Dr. E. J. Cardwell.

Personal.—Dr. S. W. Woodyard, Greeneville, has recovered from his recent attack of influenza and resumed practice.——Dr. W. D. Poston, Brownsville, was stabbed by a negro recently and is said to be in a serious condition.——The degree of doctor of laws was conferred on Dr. John A. Witherspoon, Nashville, by the University of Georgia, January 29.——Dr. W. G. Frierson, Shelbyville, announces his retirement from practice.

WISCONSIN

Sanatorium Assured.—The Eau Claire Branch of the Wisconsin Antituberculosis Society has guaranteed $1,500 to equip the proposed sanatorium for tuberculosis. This action assures the immediate erection of the building.

Personal.—Dr. C. J. Coffey, Milwaukee, has gone to Europe.——Dr. Frank S. Wiley, Fond du Lac, entertained sixty of his friends among the medical fraternity of Fond du Lac city and county, at a dinner, February 20, in celebration of the thirtieth anniversary of his graduation from Rush Medical College, Chicago.

Council Against the Gospel of Health.—The finance committee of the Common Council of Milwaukee has failed to approve the appropriation of $2,500 asked by Health Commissioner Kraft for the publication of the monthly organ of the department, the *Healthologist*, as it did not seem to recognize the necessity for this expenditure and also considered the issuance of the magazine at public expense illegal.

WEST VIRGINIA

New Governor a Physician.—Dr. D. D. Hatfield, English, the first medical man to be elected governor of the state, was inaugurated last month.

Small-Pox Disappeared.—Berkeley Hospital for Small-Pox has been closed, the last patient having been discharged. During the prevalence of small-pox about forty patients were treated in the county, and three cases in Martinsburg. No deaths resulted.

New Officers.—Little Kanawa and Ohio Valley Medical Society at Parkersburg: president, Dr. W. S. Link; secretary, Dr. Marvin R. Stone, both of Parkersburg.——Brooke County Medical Association at Wellsburg: president, Dr. B. F. Harden, Wellsburg; vice-president, Dr. W. T. Booher, Bethany.

State Sanatorium.—The sanatorium for the cure and treatment of tuberculosis established by the state on a farm of 630 acres at Terra Alta, Preston County, in the heart of the Allegheny Mountains, was opened January 15. Three buildings accommodating sixty patients have been erected, one an administration building and two pavilions. The sanatorium is supplied with water from mountain springs and a dairy and poultry farm is to be conducted in connection with the institution. Dr. E. E. Clovis has been appointed superintendent.

GENERAL

Safeguarding America Against Disease.—To guard against the introduction of plague and yellow fever through tropical fruit importations between April and November, Surgeon-General Blue, U. S. P. H. S., has ordered Surgeon J. H. White, New Orleans, to proceed to Belize, Puerto Cortez, Tela and Ceiba, Honduras; Livingston, Zacapa and Puerto Barrios, Guatemala; Bocas del Toro, Panama; Port Limon, Costa Rica; and Kingston and Port Antonio, Jamaica, to inspect health conditions and precautions

Attacks "Diploma Mill."—The Illinois State Board of Health charges the "Western University" with using the mails to defraud. According to Dr. Egan, this "diploma mill" was organized in 1897 and for three years did business openly in Chicago, issuing diplomas through correspondence. From 1900 to 1908 nothing was heard of the University, but about two years ago letters began to be received from British India, addressed to the Western Medical School, inquiring the price of medical degrees. The university is said to have offered for sale degrees in surgery, medicine and dentistry to residents of China and India at a flat rate of $100.

Abstract of Surgery.—*Surgery, Gynecology and Obstetrics* with its February issue begins the publication of a supplement called the *International Abstract of Surgery* which is published in collaboration with French and German and English surgical journals. The editors are Dr. Franklin H. Martin, Chicago; Mr. B. G. A. Moynihan, Leeds, England; Dr. August Bier, Berlin, and Dr. Paul Lecène, Paris, together with a large consulting and collaborating editorial staff. The abstracts and bibliography take up 128 pages of the February issue considered under the following general heads: Surgical technics; surgery of the head and neck; surgery of the chest; surgery of the abdomen; surgery of the extremities; orthopedic surgery; surgery of the nervous system; diseases and surgery of the skin and appendages, and miscellaneous; gynecology; obstetrics; genito-urinary surgery; surgery of the eye and ear, and surgery of the nose, throat and mouth. This extensive undertaking makes an excellent appearance in its first issue and will prove of great practical value.

University of Missouri Medical Bulletins.—The University of Missouri has begun the publication of a series of popular medical bulletins, which should be of value to both the profession and the public in an educational way, concerning the topics of preventive medicine. The first bulletin is by Dr. O. W. H. Mitchell, Assistant Professor of Pathology and Bacteriology in the university, and is on the subject of "Bacteria and Disease." It is a clearly and simply written article that anyone may understand. The pamphlet gives a brief history of the discovery of bacteria and a discussion of their characteristics and varieties, a brief explanation of the subject of immunity or body-resistance, and methods of destruction of bacteria, sterilization, disinfection, etc. It also gives a list of references to elementary and popular articles and books on bacteria and publications of a more advanced and technical nature, together with a glossary of terms used in the article in connection with bacteria and disease. Among the other articles to be published in this series are pamphlets on preventing typhoid, the early recognition of contagious diseases in school children, and eye, nose and throat troubles in children. These pamphlets will be distributed free to those requesting them, and should prove a valuable and authoritative means of educating the public in health matters.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 22, 1913.

Career of Dr. Wilson of the National Antarctic Expedition, 1910

The career of Edward Adrian Wilson, B.A., M.B. (Cantab.), head of the scientific staff of the national Antarctic expedition, who, after reaching the pole, perished in the tent with Captain Scott and Lieutenant Bowers, has a special interest for physicians. Dr. Wilson was the son of a physician, and was educated at Cambridge, where he had a distinguished career. In 1894 he took a first class in the natural science tripos. Then he turned his attention to medicine and entered St. George's Hospital. Of a philanthropic and religious bent, he worked at the mission of his college in the East End of London. In March, 1898, he developed pulmonary tuberculosis, which was thought to be due to overwork. He went to Davos, where he slowly recovered. He graduated M.B. in 1900, but in consequence of the attack he had undergone he adopted the open-air life of a naturalist, and in 1901 he was appointed surgeon, zoologist and water-color artist to Captain Scott's first Antarctic expedition. His drawings of polar scenery excited great admiration, but his collection of zoologic specimens, which appealed only to specialists, was of greater importance. In a lecture delivered at St. George's Hospital he asserted, as a result of his experience on the expedition, that vegetables neither prevent nor cure scurvy, but that fresh meat does. In 1905 he did important work on an inquiry into grouse disease. On the last expedition he was appointed head of the scientific staff, and appears to have been most successful in the collection of specimens. In spite of the difficulties encountered in the return journey, the specimens were never abandoned, and those found in the hut with the three bodies weighed 35 pounds. The story of the tragic end has been told to the world. It is only necessary to add that Dr. Wilson was a man of simple and straightforward character, with a fund of genial humor which made him the life of the expedition. He has left a memory of which the British nation in general and the medical profession in particular will long feel proud.

The British Medical Association and the National Insurance Act

After the defeat of its policy, the dominant party in the British Medical Association seems inclined to fight what may be termed a rear-guard action. The association has issued a circular to physicians in order to ascertain whether the conditions of service are such that practitioners in large numbers will leave the panels in April when their contracts expire, or whether the profession is going to accept the panel system as an accomplished fact and wishes the association now to use its machinery for the purpose of remedying the defects found by experience in the act and regulations. In order that the association may have the necessary information, answers are requested to the following questions: "Are you giving service under the national insurance act? Did you accept service willingly or unwillingly? Are you satisfied with the conditions of service and remuneration so far as you are able to judge them? If not, will your dissatisfaction determine you to decline to renew your contract with the local insurance committee at the termination of the provisional three months, provided that a sufficient number of practitioners in your area will do the same? If dissatisfied, with what conditions of service are you dissatisfied and what alteration do you consider should be made therein? If not on the panel, have you any wish or intention to go on? If the government sought to overcome the opposition of the profession in any locality by appointing whole- or part-time officials to treat insured persons, do you know of practitioners in your division area of whom you have a reasonable certainty that they would accept such appointments, and what is their approximate number? If not on the panel, will you be good enough to supply particulars as to the numbers of insured persons who have been attended by you since Jan. 15, 1913, in spite of the fact that they will have to pay you private fees?"

The National Insurance Act: Removal of the Grievance of Too Much Clerical Work

The extraordinary and unnecessary amount of clerical work required of physicians under the national insurance act which interferes with their professional work and keeps them up at night until the small hours of the morning, described in a previous letter, is about to be remedied. As a result of conferences held by insurance commissioners with representatives of the National Insurance Practitioners' Association, the following official statement has been made: The issue of the red medical ticket was a temporary measure required by special circumstances incidental to the coming into operation of the act. After a physician has sent in a form accepting an insured patient for treatment he will not be required to fill up any new form for this person as long as he retains him on his list. Day books will be discontinued and a simple card system will be used for keeping a record. The number of entries will be reduced. In particular the physician will not be required to enter the insured person's name, society, or society number on the card more than once a year. The issue of prescription forms in triplicate will be discontinued; only one form will be given to the patient to give to the chemist and no physician need retain a duplicate for his own use unless he wishes. When physicians on the panel so desire, payments will now be made to them on account of insured persons on their lists.

The Dangerous Neglect of Vaccination

The relaxation of the vaccination law and its dangerous consequences have been described previously in THE JOURNAL. Speaking at the annual dinner of the public vaccinators of England and Wales, Dr. Arthur Maude, the president, complained that though the public vaccinators were doing an important work they received no assistance from the government. The importance of vaccination was recognized all over the world—in Japan, Servia, Mexico and Russia. The only place in which is was not recognized was England. The proportion of unvaccinated people now amounted to about 50 per cent. of the population, and in many towns was still larger. They might do something in the way of isolation when there was a limited outbreak, but the outbreak which would come would not be limited and the hospital accommodations would be totally inadequate.

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BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 14, 1913.

Headquarters for Psychologic Examination

The foundation of a central headquarters for individual and differential psychologic research has been proposed by the management of the institute for applied psychology and collective psychologic research at Klein-Glienicke near Potsdam. Such headquarters are already provided in the institute in an embryonic form, as on the occasion of the fifth congress for experimental psychology, this institute held an exhibition of research material, and since then this exhibit has become permanent, through the influence of the Prussian department of education and the German educational exposition, which is under the control of the department of education. The headquarters will aim to collect material of various kinds for psychologic tests and experiments, photographs, especially of expressions of the face which may be used for psychologic purposes, specimens of handwriting, kinematograph serial pictures and reports and tabulations of individual and differential psychologic experiments.

Free Prophylactic Inoculation Against Diphtheria

During the diphtheria epidemic last winter, the city charity physicians were authorized in cases of diphtheria among the poor either to inoculate the remaining members of the family, especially children, or to refer such persons to the nearest municipal hospital for an inoculation for which no charge was made. On investigation it has been shown that through an early serum treatment of the sick (if possible withia the first twenty-four hours) and the preventive injection of persons exposed to infection, especially children, unusually favorable results were obtained. The commission for the municipal hospitals and for public hygiene has therefore decided to carry on again this winter similar gratuitous prophylactic inoculations in all the municipal hospitals.

Changes in the Berlin First-Aid Service

The already existing emergency stations in Berlin—which will in the future be called first-aid stations (*Rettungsstellen*)—will form the foundation for the municipal first-aid service. For this purpose the accident stations which have heretofore existed will be taken charge of by the board of trustees of the Red Cross accident stations. For the stock and instruments, so far as they were on hand in the station on May 1, 1909, the sum of about 9,000 marks ($2,250) will be paid. Special regulations will be established for the medical service in the future municipal first-aid stations, and provision will be made for taking over, and settling with, the physicians formerly employed.

MEDICAL OFFICERS

The city council is proceeding on the principle that to ensure permanent and satisfactory readiness for medical service at the emergency stations it is necessary that the physicians concerned should be brought into as close and permanent connection with the individual stations as possible. For this reason provision is made that in the future no physician can be connected with two stations; that each physician must live within the district of the station with which he is connected; further that each must agree to a service lasting at least three consecutive hours, and at least forty-five hours of day service and thirty hours of night service in a month, and that only a limited number of physicians may be employed by each individual station.

REMUNERATION

For the same reason, to make the service at the stations more attractive to the physicians and also in accordance with other conditions of the present time, the salary, which has not been raised since 1907, has been increased moderately, to 1.25 marks (instead of 1 mark) for one hour of the day service, and 9 marks (instead of 8) for the night service, beginning at 10 o'clock in the evening and ending at 8 o'clock in the morning. For the regulation and supervision of the medical service, there will be in charge of each station a supervising physician who will be responsible to the board for the regular working of the station. The supervising physician will receive for his services a salary of 800 marks ($200). Besides this control and supervision of the medical service, there is, as heretofore, the control exercised by the board. Finally, in the interest of the united management of the medical service at all stations, it will be necessary to put at the head of all the physicians who are connected with the first-aid service one or more physicians as medical directors of the first-aid service. These directors will be employed on the basis of a private-service contract, will be subordinate to the board, and are to be paid from the 6,000 marks which are included in the budget for this purpose. After the completion of this new order of things, the expenses of the Berlin first-aid service will not exceed those heretofore appropriated by the municipal authorities. The sum of 220,000 marks ($55,000) will be sufficient.

Personal

Salge, the pediatrist of Freiburg, has been called to the chair of pediatrics at Strasburg, as Czerny's successor. He will assume the duties of his office April 1. Salge was a pupil of Heubner.

Thiemich of Magdeburg has been appointed director of the children's hospital at Leipsic, in place of Soltmann. Finkelstein of Berlin was again proposed in the first place for this position, but undoubtedly his being a Jew prejudiced the ministry against his appointment.

January 13 Heller, the director of the pathologic institute at Kiel, died at the age of 72. In 1869 he became a member of the faculty at Erlangen, and in 1872 he was called to Kiel. His most prominent works deal with intestinal parasites, diseases of the liver and tuberculosis.

Priv.-Doz. Dr. Wessely, who has heretofore been assistant to Hess, has been appointed director of the Würzburg eye clinic as his successor.

BUDAPEST LETTER

(From Our Occasional Correspondent)

BUDAPEST, Feb. 9, 1913

The Wounds Caused by Modern Rifles

Dr. Bertsalan Widder, a Hungarian surgeon, who was sent to the Balkan battle-field by the Hungarian Surgical Society to study war surgery, recently read a paper before the Hungarian Surgical Society on this subject. He says that the bullets of the Turkish rifles are pointed, and thus they are very humane. They either kill the soldier, or run through the body so that the wounds are curable. He has seen many soldiers dismissed from the hospitals entirely cured, though wounded on arm, leg, abdomen, etc. In one patient a bullet entered through the right frontal bone and went out 6 cm. from the entrance, in the temporal region. The fragment of bone pressed on the corresponding part of the brain, leaving behind paralysis of the left arm. In another instance of nerve-lesion the bullet entered the left side of the neck and went out through the right shoulder. The paralysis and painfulness of the right arm and hand are existing yet. In the same hospital there is a patient in whom the right kidney was shot through and the bullet is imbedded in the left hip-bone. The patient feels tolerably well; the urine was bloody, but is not so now. In one case a soldier, while lying prone, was shot from a distance of 40 meters. The bullet entered at the top of the head and passed through the brain and hard palate; then it pierced its way through the bottom of the mouth and muscles of the neck. The bullet was palpable downward from the armpit under the third rib, and could be removed with ease. The patient was in bed for twenty-six days and left the hospital cured.

Dr. Grünfeld, an Austrian, had altogether seventy wounded. In one of his patients the right femoral artery and vein were shot through. Before this soldier was carried to the hospital, the leg had become gangrenous, so that it had to be amputated. From so many thousands of patients only eight or ten amputations had to be performed. In Grünfeld's seventy cases there were thirty-six in which the bullet pierced only soft parts and the patients were entirely cured; in eighteen cases there were bone injuries. The remaining cases were still more serious; in four cases joints were crushed. The latter injuries were caused by shrapnel; three out of the seventy cases healed without any dressing; an injury of the abdominal wall, caused by cannon-shot, resulted in peritonitis; in one case injury of the popliteal vessels necessitated amputation. In this case an old rifle had been used.

AWFULNESS OF SHRAPNEL

Thus most of the injuries were caused by bullets and shrapnel. The small number of injured by cannon shows that those hit by cannon-balls were killed instantly. The injuries caused by bullets are favorable from the point of view of healing, even if they are not dressed properly. Bayonet injuries were not seen; if there were any, they must have been mortal. The shrapnel injuries were terrible. Shrapnel causes a large wound, and the missiles carry with them flesh or bones, or whatever they encounter, leaving behind them a wide field for infection. The shrapnel falls from the air like soda-water from

a siphon. The injured soldiers and officers have told terrible things about shrapnel fatalities.

The *Spitzgeschoss* (pointed bullets) did little harm even in the brain. This is shown by the fact that in the wards every fourth or fifth patient is injured in the head, and bullets have penetrated the brain. These patients are improving.

Dr. Widder saw one patient, who did not sleep or talk, but only sat and stared before him. The bullet had penetrated the right lobe of the brain. This patient died in five days.

Injuries to the lungs were relatively of benign character. It was unfortunate that the Roentgen apparatus of the Turks was not in condition to be of any service to us.

HOSPITAL EQUIPMENT

In general the hospital equipment of the Turks left much to be desired in accommodations, instruments and means for carrying the wounded from the battle-field. The contrary can be said of the Servians. They have proper conveyances, fine hospitals and even a large stock of coffins. In every Servian hospital nursing was done by women of the aristocracy. Dainty white hands bathed soldiers who had not been able to wash themselves for weeks. These women even helped cut the hair of the soldiers. They brought bed-linen and pillows, and distributed preserves, fruits and candies among the soldiers.

In the temporarily transformed schools the "better" places were kept for the physicians, who slept in cold rooms, on simple sheets laid on a straw mat on the floor. Hundreds of pretty women are washing and ironing dressings, scrubbing the floors, etc. They work in white coats, their heads dressed, each with a red cross on the forehead. This unexampled discipline and sincere love of compatriots is moving. It is not vanity but the pure love of the Fatherland that drives them to do the meanest work with such zeal and fervor. Dr. Widder said that the wounded soldiers do not cry here. You cannot hear a sigh even. They smile, because they think that they are all heroes. They withstand the most painful operations without a word. In this they are animated by the dear, diligent ladies surrounding them.

If as General Surgeon Soubbotich said, this war is the war of Humanity, he must have had in mind the self-sacrificing work of the conscientious medical staff and the noble work of the Red Cross women. It would be difficult to find anything humane in the whole war besides these.

Association News

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

The Proposed Change in Name

GEORGE H. SIMMONS, M.D., LL.D.
CHICAGO

EXPLANATORY NOTE:—THIS ABSTRACT OF AN ADDRESS BEFORE THE CONFERENCE OF STATE SECRETARIES IS REPUBLISHED FROM THE AMERICAN MEDICAL ASSOCIATION BULLETIN OF NOV. 15, 1912, ON THE REQUEST OF THE JUDICIAL COUNCIL. THE HOUSE OF DELEGATES REFERRED THE REPORT OF THE COMMITTEE TO FORMULATE AMENDMENTS TO THE CONSTITUTION AND BY-LAWS TO EXTEND MEMBERSHIP, PRESENTED AT THE 1912 SESSION (JOURNAL, JUNE 15, 1912, P. 1899) TO THE JUDICIAL COUNCIL WITH POWER TO CONFER WITH CONSTITUENT ASSOCIATIONS. THE COUNCIL, AFTER CAREFUL CONSIDERATION, ENDORSES THE PROPOSED CHANGE AND TAKES THIS MEANS OF BRINGING THE SUBJECT TO THE CONSTITUENT ASSOCIATIONS AS WELL AS DIRECTING TO IT THE ATTENTION OF THE MEMBERS.

I have been asked to discuss the present conditions of membership in the American Medical Association and the proposed change, which has been under discussion recently. While this is not directly related to the object of this conference, the discussion of uniform regulation of state membership, it is so closely connected with it that I cannot refuse to take advantage of the opportunity of discussing the question before such a large representation of state secretaries.

To get a clear understanding of what the present term "members" of the American Medical Association means, it is necessary to go back a little in the history of the Association.

The American Medical Association always has been a delegated body; only "delegates" ever had a right to take part in its proceedings.

"Permanent members" was a term originally applied to those delegates who connected themselves permanently with the Association after they had served as delegates. "Permanent members," however, had no rights except those of attending the meetings and taking part in the scientific work. In 1883, THE JOURNAL was started and the following year, for the purpose of increasing the circulation of THE JOURNAL, there was created another class: "Members by Application." A member of any so-called affiliated society could become a "member by application" simply by making application for membership and paying the annual dues. The difference between "members by application" and "permanent members" was that the latter had been delegates, whereas the former became members simply by making application. Neither "permanent members" nor "members by application" had vote or voice in business meetings.

MEMBERSHIP IN THE A. M. A. TO-DAY ON THE SAME BASIS AS THE FORMER "MEMBERS BY APPLICATION"

Briefly, we have the following situation:

1. The voting membership of the organization is the combined membership of all the 2,000 (more or less) component county societies, amounting approximately to 70,000 members. These elect the delegates to the House of Delegates of the state associations; they in turn elect the delegates who form the House of Delegates of the American Medical Association. Before 1901 the delegates to the American Medical Association were elected, or appointed, by the "affiliated" societies, which included local, district and state societies. Since 1901, that is, since the reorganization, the delegates to the national body are elected not by local, district and state societies, but by the state societies alone.

2. The so-called "members of the American Medical Association" are the direct successors of the old "members by application." By their payment of dues and their subscriptions to THE JOURNAL, they were and are to-day the supporting or contributing group of the members of the organization.

3. The House of Delegates is composed of approximately 150 members, who are elected by the various state Houses of Delegates, which are in turn composed of delegates elected by the members of the component county societies. The House of Delegates of the American Medical Association, therefore, is created by, and represents the combined membership of all the county societies of all the states; it is not elected by, nor does it represent, the present "members of the American Medical Association" as such; it never has.

The result is that we have two classes which could be called members. First, the actual, logical memberships of 70,000, usually designated as "the membership of the organization." Second, the 36,822 contributing or supporting members, who are designated as "members," although these "members of the American Medical Association" have no more privileges than have all members of the organization, except the right to take part in section work. This present situation I have had shown on the accompanying chart (Chart 1). The membership of the American Medical Association, at present 36,822, is an inner circle of the membership of county societies, while the House of Delegates is a still smaller circle composed of those who have been elected to represent the members of the organization of the whole country.

Now the situation itself is perfectly logical and is in every way to be commended. The trouble is that we have not named our groups accurately. Those whom we now call "members of the American Medical Association" are really those members of the organization who, in addition to supporting their county and state associations, also contribute to the support of the American Medical Association, while for the actual membership of 70,000 members we have no distinctive name.

The change that has been proposed is not a change in condition at all. It is simply a change in name. It is proposed to designate the 70,000 members included in the large outer circle (Chart 2) as "members of the American Medical Asso-

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ciation," which they really are and always have been, while those included in the inner circle (that is, those members in good standing of their county and state societies, who also pay

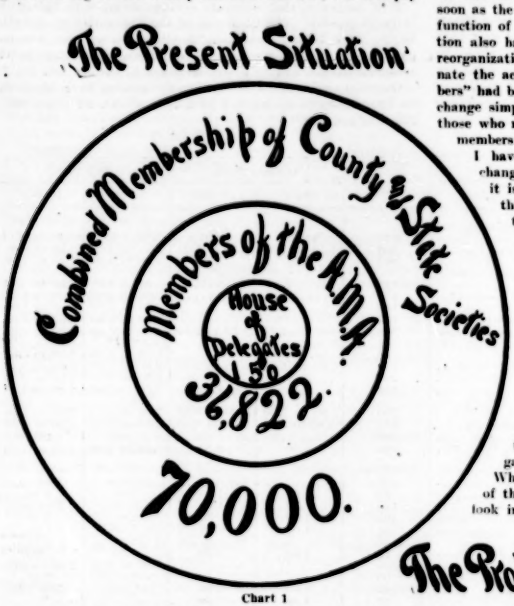

Chart 1

$5 a year to support the work of the American Medical Association) are to be called "fellows of the American Medical Association" instead of "members." This will make no change in the membership standing or relations of any man. If this suggestion is adopted, all members in good standing in their state organizations will be designated as "members of the American Medical Association," while those members who contribute $5 a year to support the work of the Association will be designated as "fellows of the American Medical Association." In other words, those who are now known as "members" of the American Medical Association will be known as "fellows" of the American Medical Association, while the term "members" will be applied to the entire, combined membership of the component county societies of the whole country.

This plan has several advantages. In the first place it will give us a name for the entire membership of the organization, which we have never had before. Before 1901 they were referred to as members of "affiliated" societies, and since then they have been called, for lack of a distinctive name, "members of the organization." Another advantage will be that it will make clear that the voting power lies with the 70,000 members and not with the 36,822 "fellows." When this plan was first proposed, some got the impression that the intention was to compel the 70,000 members of the county societies to become "supporting members" of the American Medical Association, as the term is now understood. This, of course, would be a ridiculous proposition. The proposed change contemplates leaving membership conditions exactly as they are; it contemplates changing the name, and not the relation.

One great advantage prior to the reorganization of the American Medical Association in 1901 was the fact that we had no name by which to designate the delegates. As soon as the name "House of Delegates" was adopted, then the function of the delegates became clear at once. The Association also has labored under the disadvantage, ever since its reorganization, that there has been no name by which to designate the actual voting membership, because the term "members" had been applied to the supporting body. The proposed change simply recognizes this fact, designating as "members" those who really are members, and designating the supporting members as "fellows."

I have already given some reasons for making the change, but there is another and more important; in fact, it is the paramount reason. Up to the present time, the members of the organization have not realized that they are, in reality, members of the American Medical Association. They regard the American Medical Association as something entirely apart from them, something in which they have no interest. These members of the organization are through their elected representatives responsible for what the American Medical Association is doing, or what it ought to do and is not doing, but they do not realize this, hence they are not interested. They do not appreciate that the House of Delegates of the American Medical Association, which they elect, is the body that is doing the work through the officers, trustees, councils, etc., which they, through their representatives in the House of Delegates of the American Medical Association, select. While only a change in name, I think the subject is of the utmost importance. I hope that all of you will look into it carefully, so as to understand exactly what

Chart 2

is intended, and then will explain it to your members at the first opportunity.

HOTELS AT MINNEAPOLIS

Announcement of Hotels and Rates for the Annual Session of the American Medical Association

The local Committee on Arrangements for the Minneapolis session, June 17-20, recommends to the members of the Association the hotels shown in the accompanying table. First are given the hotels selected as headquarters for the sections. A few St. Paul hotels, so designated, are included; all the others are in Minneapolis. In addition, the rooms in the dormitories on the University Campus will be available for rental.

The meetings will be held in the University buildings situated between Minneapolis and St. Paul so that members may lodge in either Minneapolis or St. Paul.

It is suggested that members arrange direct with hotels as early as possible. The Chairman of the Committee on Hotels, Dr. S. Marx White, Donaldson Building, Minneapolis, will be pleased to answer any special questions concerning hotel accommodations, and to assist members in the matter.

Other announcements concerning the session have appeared in THE JOURNAL during the past four weeks, on pages 460, 535, 615 and 680.

Hotel, Section Headquarters and Street Address	No. of Rooms	Without Bath		With Bath	
		Single	Double	Single	Double
RADISSON—*General Headquarters*—Seventh St., bet. Nicollet and Hennepin	320	$1.50	$2.50	$2.50 to $5.00	$6.00 to $7.00
WEST—*Practice of Medicine*—Fifth St. and Hennepin Av.	309	1.50 to 3.00	3.50 to 4.00	2.00 to 4.00	3.50 to 6.00
LEAMINGTON—*Surgery*—1013 Third Av., South	690	1.50	2.50	2.50 to 5.00	5.00 to 7.00
ANDREWS—*Obstetrics, Gynecology and Abdominal Surgery*—Fourth and Hennepin	186	.....	.....	1.50 to 3.00	2.50 to 4.00
DYCKMAN—*Ophthalmology*—Sixth St., bet. Nicollet and Hennepin	175	.....	.....	2.00 to 3.00	4.00 to 6.00
PLAZA—*Laryngology, Otology and Rhinology*—1700 Hennepin Av.	100	.....	.....	2.00 to 5.00	3.00 to 7.00
HASTINGS—*Diseases of Children*—Twelfth St. and Hawthorne Av.	127	.....	.....	1.50 to 2.00	2.00 to 3.00
MAJESTIC—*Pharmacology and Therapeutics*—Seventh and Hennepin	160	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 4.00
CAMFIELD—*Pathology and Physiology*—Eighth St. and First Av. South	96	.....	.....	1.00 to 2.00	2.00 to 3.00
NICOLLET—*Stomatology*—Washington and Nicollet Avs.	138	1.00 to 1.50	2.00 to 2.50	2.00 to 2.50	3.00 to 3.50
MARYLAND—*Nervous and Mental Diseases*—Grant and Vine Place	200	.....	.....	1.50 to 2.50	2.50 to 4.00
ELGIN—*Dermatology*—Eighth St. and Hennepin Av.	150	1.00	1.50	1.50 to 2.00	2.00 to 3.00
ROGERS—*Preventive Medicine and Public Health*—27 Fourth St., South	200	1.00 to 1.50	2.00 to 3.50	2.00 to 3.50	3.00 to 5.00
VENDOME—*Genito-Urinary Diseases*—19 Fourth St., South	185	1.00 to 2.00	2.00 to 3.00	2.50 to 3.00	3.50 to 4.00
WAVERLY—*Hospitals*—1107 Harmon Place	80	.....	.....	1.00	2.00
ST. PAUL (St. Paul)—*Orthopedic Surgery*—Fifth and St. Peter Sts.	360	1.50	2.50	2.50 to 5.00	4.00 to 7.00
Other Hotels					
ABERDEEN (St. Paul)—Dayton and Virginia	200	.....	.....	1.50 up.	3.00 up.
ALLEN—200 Third St., South	65	1.00	1.50	2.00	2.50
BEAUFORT—112 Third St., South	140	.50	1.00	1.00 up.	2.00 up.
BERKLEY—First Av. and Thirteenth St., South	103	1.50	2.50	2.00	3.00
CARLETON—20 Eighth St., South	50	1.00	2.00	1.50	3.00
CLINTON—Fourth Av., South, and Grant St.	65	.....	.....	2.00	3.50
COMMERCIAL—1 Central Av.	40	1.00	1.50	1.50	2.00
CURTIS COURT—309 Tenth St., South	200	.....	.....	1.00 to 2.50	2.00 to 5.00
EMPRESS—316 Central Av.	20	1.00	1.50	2.00	3.00
FREDERICK (St. Paul)—Fifth and Cedar Sts.	100	1.00	2.00	1.50 up.	2.50 up.
GARRICK—2½ Seventh St., North	27	1.00	2.00	.....	.....
GOLDEN WEST—301 Washington Av., South	80	.75 to 1.25	1.50 to 2.50	1.50 to 2.50	2.00 to 3.00
HAMPSHIRE ARMS—Fourth Av., South, and Ninth St.	350	1.00	1.50	1.50 up.	2.00 up.
NATIONAL—Second Av., South, and Washington	200	1.00 to 1.50	2.00 to 3.00	1.50 to 3.00	3.00 to 5.00
OGDEN—Twelfth St. and Mary Place	84	.....	.....	2.00	2.50
PAULY—1-3-5 Nicollet Av.	50	1.00	1.50	1.50	2.50
ROSSLYN—707 Summit Av.	70	.....	.....	1.00 to 1.50	2.50 to 4.00
RYAN (St. Paul)—Robert St.	300	1.00 to 1.50	2.50 to 4.00	2.00 to 4.00	3.00 to 6.00
REVERE—316 Second Av. South	100	1.00	1.50	1.50	2.50
SOUTHERN—822 Fourth Av., South	50	.75	1.50	1.50	2.00
STRATFORD—1200 Nicollet Av.	40	1.50	3.00	.....	.....
SUMMERS—Fourth Av. and Tenth St.	75	.75 to 1.00	1.00 to 1.50	.....	.....
WILLARD (St. Paul)—Tenth and St. Peter's Sts.	200	.75	1.25	2.00 to 4.00	3.00 to 6.00
WILLISTON—500 Tenth St., South	60	1.00	1.50	2.00	2.50

Marriages

STUART HARRIS SHELDON, M.D., Portland, Ore., to Miss Marion Louise Smith of St. Paul, Minn., February 26.

DAVID DUKE TODD, M.D., Calumet, Mich., to Miss Thayer Thompson of Hyde Park, Chicago, February 19.

HARRY Z. HIRSHMAN, M.D., to Miss Charlotte Elizabeth Mathews, both of Philadelphia, February 19.

L. LAFAYETTE BOND, M.D., Denison, Ia., to Miss Florence Faulkner of Council Bluffs, Ia., January 29.

JOHN TOLSON O'FERRALL, M.D., Laurel Miss., to Miss Gladys Moulton of New Orleans, La., January 15.

WILLIAM WORTH HALE, M.D., to Miss Helen Marie Evans, both of Washington, D. C., February 13.

JOSEPH TATE SMITH, JR., M.D., Cleveland, O., to Miss Mary K. Hutchins, at Baltimore, February 20.

SPIRO SARGENTICH, M.D., to Miss Jeanette Maxine Meiner, both of Portland, Ore., February 13.

ALPHA R. SAWYER, M.D., to Miss Dorothy A. Parker, both of Roslindale, Boston, February 19.

GEORGE ALFRED MAUER, M.D., Meriden, Ia., to Miss Albia Ross of Riverside, Ia., February 12.

Deaths

John Berry L'Hommedieu, M.D. New York University, New York City, 1890; a member of the American Medical Association; first deputy health officer of the Port of New York; for several years a member of the staff of Bureau of Municipal Diseases of the State Health Department; died suddenly at his home in the Quarantine Station, Staten Island, N. Y., February 21, from heart disease, aged 46.

J. B. Shawgo, M.D. Bennett Medical College, Chicago, 1877; of Quincy, Ill.; a member of the Illinois State Medical Society; a veteran of the Civil War; for four years an alderman of Quincy and president of the board of directors of the Public Library, and for twenty years chairman of the board of commissioners of the House of Correction; died in a hospital in Jacksonville, February 19, aged 69.

Walter Lawrie Whann, M.D. Starling Medical College, Columbus, O., 1857; Jefferson Medical College, Philadelphia, 1868; for many years a member of the American Medical Association; and for more than half a century a practitioner of Franklin and Venango County, Pa.; died at his home in San Diego, Cal., about February 20, from senile debility, aged 93.

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William James Callan, M.D. Long Island College Hospital, Brooklyn, N. Y., 1892; for twenty-five years a professor of elocution and English literature in Catholic institutions of Brooklyn and vicinity; formerly connected with the Brooklyn office of the New York Department of Health; died in a convent at St. Joseph's, Sullivan County, N. Y., February 13, aged 47.

William Conrad Wile, M.D. New York University, New York City, 1870; for many years publisher and editor of the *New England Medical Monthly;* consulting surgeon to the Danbury (Conn.) Hospital, and founder and treasurer of the Danbury Printing Company; a veteran of the Civil War; died at his home in Danbury, February 21, aged 66.

Kingman B. Page, M.D. University of Vermont, Burlington, 1887; a member of the American Medical Association, American Urological Association and New York Academy of Medicine; a member of the attending staff of St. Marks and the People's hospitals, New York City; died at his home in New York, February 19, aged 49.

Harvey Daniel Hill, M.D. University of Michigan, Ann Arbor, 1867; a veteran of the Civil War and later in charge of the government dispensary at Springfield, O.; for three terms a member of the Kansas legislature from Butler County; died at his home in Baldwin, Kan., February 8, aged 73.

William W. Holmes, M. D. Barnes Medical College, St. Louis, 1903; (license, Iowa, practitioner, 1886); a practitioner of Denison, Iowa, since 1873; a veteran of the Civil War; superintendent of the Denison Hospital; died in that institution, February 8, from malignant disease, aged 70.

John F. Duvall, M.D. Physio-Medical College of Cincinnati, 1868; Eclectic Medical University, Kansas City, Mo., 1902; a member of the faculty of the latter institution; a veteran of the Civil War; died at his home in Kansas City, Mo., February 15, from cerebral hemorrhage, aged 66.

William C. McCurdy, M.D. University of Medicine, Indianapolis, Ind., 1898; physician and health officer of Pawnee County, Kan., and health officer of Larned; president of the Larned Hospital Association; died at his home, February 14, after an operation for kidney disease, aged 44.

John C. Conner, M.D. Cincinnati College of Medicine and Surgery, 1877; died at his home in Crescent City, Ill., February 11, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, while despondent as the result of ill health, aged 68.

Minot A. Steele, M.D. Albany (N. Y.) Medical College, 1890; a member of the Rhode Island Medical Society; medical examiner of Portsmouth, R. I.; died in Newport, February 17, from erysipelas, following the bite of a dog about two weeks before, aged 45.

Albert P. Kadison, M.D. University of Munich, Bavaria, 1874; is said to have been the first Jewish physician in Chicago; known as "the little father of the Ghetto," active in Jewish social work; died at his home in Chicago, February 26, aged 78.

Henry O. Ritter, M.D. Louisville (Ky.) Medical College, 1896; of Orangeville, Ind.; died at his home, February 15, from the effects of a gunshot wound, self-inflicted, it is believed with suicidal intent, while delirious as the result of an injury, aged 46.

John Headland, M.D. Physio-Medical College of Indiana, Indianapolis, 1886; a member of the American Medical Association; at one time mayor of Galva, Ill.; died at the Peoria Sulphur Springs Sanitarium, February 12, from heart disease, aged 50.

Alfred James Brown, M.D. Bellevue Hospital Medical College, 1877; local surgeon at Higbee, Mo., for the Chicago & Alton and Missouri, Kansas & Texas railways; died suddenly in his store in Higbee, February 17, from heart disease, aged 56.

Israel W. Fulton, M.D. Washington University, Baltimore, 1872; a Confederate veteran; a practitioner of Indian Territory and Oklahoma for more than forty years; died at his home in Ardmore, February 14, from pneumonia, aged 66.

Ulysses P. White, M.D. College of Physicians and Surgeons, Baltimore, Md., 1894; for several years local surgeon of the Santa Fe system at Artesia, N. Mex.; died at his home in Artesia, February 3, from cerebral hemorrhage, aged 47.

James Jeremiah Williams, M.D. Bellevue Hospital Medical College, 1874; a member of the consulting staff of Bellevue Hospital; died at his home in the Bronx, New York City, February 12, from cerebral hemorrhage, aged 67.

George White McClure, M.D. Rush Medical College, 1900; a member of the American Medical Association; formerly of Cartersville, Mo.; died at his home in Springfield, Mo., February 17, from tuberculosis, aged 35.

Herbert Work Ferry, M.D. College of Physicians and Surgeons, Chicago, 1904; of Poland, O.; a veteran of the Spanish-American War; died at his home in Poland, O., February 14, from pneumonia, aged 33.

W. W. Ashton, M.D. University of Louisville, Ky., 1859; a Confederate veteran; one of the oldest practitioners of Rapides Parish, La.; died at his home in Alexandria, February 16, aged 75.

William Meyer, M.D. University of Jena, Austria, 185—; for more than thirty years a practitioner of California; died at his home in National City, February 16, from senile debility, aged 83.

Daniel S. Coleman, M.D. University of Wooster, Cleveland, O., 1869; one of the oldest practitioners of Knox County, O.; died at his home in Howard, February 15, from nephritis, aged 69.

Adolph Kantrovitz, M.D. Imperial University of Warsaw, Poland, 1862; a member of the Medical Society of the State of New York; died at his home in New York City, in December last.

William A. Gabbert, M.D. Eclectic Medical Institute, Cincinnati, 1875; of Paris, Ill.; died at the home of his brother in Bloomington, Ill., February 13, from arteriosclerosis, aged 65.

Robert Christy Gibson, M.D. University of Pennsylvania, Philadelphia, 1876; formerly of Pittsburgh; died at his home, in Chicago, February 14, from cerebral hemorrhage, aged 65.

Charles Clark Willets, M.D. Jefferson Medical College, 1882; of Sunbury, Pa.; died at the Mary M. Packer Hospital in that city, February 10, from cerebral hemorrhage, aged 56.

Curtis T. Fenn, M.D. Rush Medical College, Chicago, 1866; a member of the Illinois State Medical Society; died at his home in Chicago, February 21, from senile debility, aged 79.

William R. S. Cornell, M.D. University of Louisville, Ky., 1880; for a time teacher in the Joplin (Mo.) Medical College; died at his home in Paola, Kan., February 1, aged 63.

William H. Shaw, M.D. Starling Medical College, Columbus, O., 1870; for twenty-five years a practitioner of Dayton; died at his home in that city, January 4, aged 68.

Joseph T. Jarboe, M.D. College of Physicians and Surgeons of Baltimore, 1889; died at his home in Hagerstown, M., February 11, from nephritis, aged 58.

John H. Kochendeifer, M.D. Starling Medical College, Columbus, O., 1885; a veteran of the Civil War; died at his home in Galion, O., February 16, aged 71.

Joseph W Walters (license, Ohio, 1896); a practitioner of Ada for more than half a century; died at his home, February 14, from senile debility, aged 83.

George William Johnson, M.D. Vanderbilt University, Nashville, Tenn., 1875; died at his home in Adairville, Ky., February 17, from heart disease, aged 70.

William A. Stoneburner, M.D. Starling Medical College, Columbus, O., 1891; died at his home in Roseville, O., February 5, from heart disease, aged 52.

Ezra A. Robinson, M.D. University of Vermont, Burlington, 1881; died suddenly at his home in Geŋoa, Ill., February 14, from heart disease, aged 59.

George Stephen Cahill, M.D. Dartmouth Medical School, Hanover, N. H., 1891; died at his home in Cambridge, Mass., Dec. 24, 1912, aged 48.

Melville Hutchinson Criswell, M.D. Hahnemann Medical College, Chicago, 1891; died at his home in Cassopolis, Mich., Dec. 14, 1912, aged 49.

Stonewall J. Alsman, M.D. Barnes Medical College, St. Louis, 1904; died at his home in Pleasantville, Ind., Dec. 12, 1912, from tuberculosis.

Charles S. Brower, M.D. College of Physicians and Surgeons, Baltimore, 1880; of Phoenicia, N. Y.; died in Kingston, N. Y., Dec. 15, 1912.

George W. Davis, M.D. University of Maryland, Baltimore, 1869; died at his home near Pleasantville, Md., January 19, aged 69.

Albert V. D. Collier, M.D. Albany (N. Y.) Medical College, 1866; of Catskill, N. Y.; died in Albany, N. Y., Dec. 15, 1912, aged 75.

George Cowles Osgood, M.D. Harvard Medical School, 1866; died at his home in Lowell, Mass., January 5, aged 74.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ANTIMERISTEM-SCHMIDT FOR CANCER

Dr. M. Childress, Oskaloosa, Iowa, writes:

"Do you know anything about the cancer serum 'Antimeristem-Schmidt?' I have two or three patients who have had operations for cancer and either have a recurrence or in all probability will have. If there is anything that will do any good in such cases I would like to use it. The only way to get this remedy is to cable money for it to the maker and I do not feel like having the people give up nearly a hundred dollars for something I know nothing about. Please inform me either through THE JOURNAL or by letter if you can give me anything trustworthy in regard to it."

Antimeristem-Schmidt is a preparation claimed to be useful in the treatment of inoperable cancer and as a supplementary treatment after operations for cancer. The originator, Dr. O. Schmidt of Cologne, and the manufacturer, Mr. W. Schmidt, as we understand, do not recommend this treatment as a substitute for operation. The treatment is founded on a theory advanced by Dr. O. Schmidt that the cause of cancer is found in a fungus, *Mucor racemosus*, which, Schmidt at first asserted, carried a protozoon which he regarded as the real cause of the disease.

The "serum," or rather the vaccine, is prepared from cultures from this fungus. Schmidt claims that he has been able to produce malignant tumors by the injection of cultures of this fungus derived from cases of carcinoma and sarcoma. Careful investigations by the Heidelberg Institute for Cancer Research have failed to show the existence in cancer of any form of fungus, especially of *Mucor racemosus*, in the tissues of malignant tumors. Other experiments made with the preparations furnished by Schmidt have failed to show in any case the production of a tumor in healthy animals (mice and rats).

Professors Wasielewski and Wülker[1] conclude therefore that the foundation of Schmidt's hypothesis of cancer formation is lacking and that there is no justification for designating his Antimeristem treatment as specific. Extensive trials of the remedy in clinical work have shown that this treatment is without effect.

In 1911 Dr. K. Kolb[2] conducted experiments with this treatment in the wards of O. von Herff, at Basel. His experience with inoperable carcinoma of the cervix showed not the slightest influence on the tumor. In a second report in 1912, Kolb refers to the failures of other observers and gives abstracts of three cases. In some cases temporary improvement was noted, but the same phenomenon has been observed in other cases in which no specific treatment was applied.

An example of the ease with which a false conclusion may be drawn in regard to the action of a remedy in inoperable cancer, a case reported by Kolb, in which a patient was operated on for uterine carcinoma by vaginal hysterectomy (Schauta's method). After four months the patient began to have pains, poor appetite, loss of weight, and a tumor was found of the size of a goose's egg adherent to the wall of the pelvis. This, however, was of an inflammatory nature and disappeared in about six weeks after it was discovered. Had this patient been given Antimeristem, the case might have been included as a remarkable cure by this remedy. Kolb[3] concludes that clinical experience indicates plainly that Antimeristem has no specific action on carcinoma cells. The experimental evidence of Wasielewski and Wülker indicates that Schmidt's theory is incorrect. Antimeristem is not a specific remedy. Dr. O. Schmidt[4] reports three favorable cases.

From the preceding reviews of the recent literature, it will be seen that this proposed treatment is another premature attempt to introduce to the public an unscientific remedy which is sold to the despairing sufferers from inoperable carcinoma at an enormously high price. If the Laboratorium W. Schmidt of Cologne is to deserve the confidence of the medical profession, it must follow the advice of Wasielewski and Wülker and see to it that incorrect ideas of the scientific foundation and activity of the preparation put out by it are no longer promulgated to physicians and the laity, and Dr. O. Schmidt should also heed the warning and halt this unscientific propaganda.

So far as the use of this vaccine in the United States is concerned, it should be noted that "viruses, serums, toxins, and analogous products" cannot be imported into the United States unless the firm has received a license from the Treasury Department. Such products are held up at the Custom-House for inquiry before being admitted. The Schmidt laboratory has not received a license as can be seen from a list of licensed institutions in *Public Health Reports*, Jan. 10, 1913.

PERTUSSIN

Dr. L. A. Roberts, Dorchester, Mass., writes: "Please tell me what the composition of Pertussin is."

Pertussin is a proprietary whooping-cough remedy manufactured by the Kommandanten Apotheke, Berlin. A "physician's sample" bottle of this preparation sent out by Lehn & Fink bears a label on which appears the following:

"100 parts Pertussin contains:

½	Ol. Thymi, et Thymol
21½	Ext. Thymi 'Taeschner'
50	Saccharum
2	Glycerinum
6¼	Alcohol
19¾	Aqua Destillata"

While it never has had much vogue in this country it has been and still is used in Germany. It belongs to that class of vegetable preparations which, since they contain no distinctive principle, are difficult of analysis—particularly as concerns the "joker" in the formula, in this case "Ol. Thymi, et Thymol" and "Ext. Thymi 'Taeschner'"—hence there has been much dispute in Germany as to the composition of this nostrum. In general, it appears that whatever virtues it has are due to some preparation of common thyme in a menstruum containing water, sugar and alcohol. At one time the preparation was found to contain potassium bromid; but tests recently made in the A. M. A. Chemical Laboratory indicated the absence of either bromids or iodids.

PASADYNE

A physician asks: "Can you tell me the formula of a preparation on the market called Pasadyne, put up by John B. Daniel, Atlanta, Georgia?"

According to the manufacturer Pasadyne is a tincture of passion-flower. Formerly this nostrum was sold under the title "Daniel's Concentrated Tincture of Passiflora Incarnata." While the manufacturer claims marvelous virtues for this preparation, made from "the fruit, roots and vines of the passion-flower or May-pop," passiflora (passion-flower) is now generally recognized as being of little if any value.

A circular makes the following absurd statement:

"Chloral and the bromids, before the recognition and advent into medicine of Pasadyne (Daniel's Concentrated Tincture of Passiflora Incarnata), were widely employed in all turbulent states of the psyche and, notwithstanding their many untoward, even sometimes dangerous effects, were held in high favor by physicians. For that matter, they still retain some of their old-time popularity, but since the superior value of Pasadyne (Daniel's Concentrated Tincture of Passiflora Incarnata) has been demonstrated to the profession's satisfaction, the erstwhile high esteem in which chloral and the bromids were held, is fast waning and ere long Pasadyne will have crowded them out."

1. Wasielewski and Wülker: Baseless Claims for Antimeristem in Cancer, München. med. Wchnschr., Feb. 20, 1912, p. 421.
2. Kolb, K.: Failure of Antimeristem, München. med. Wchnschr., May 16, 1911.
3. Kolb, K.: Negative Experiences with Antimeristem in Cancer, Berl. klin. Wchnschr., April 22, 1912.
4. Schmidt, O.: Antimeristem in Treatment of Inoperable Cancer of the Uterus, Zentralbl. f. Gynäk., Dec. 23, 1911.

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Giving the reason why the drug passiflora was not deemed of sufficient value and hence, along with the Daniel preparation, was refused recognition, a report of the Council on Pharmacy and Chemistry (THE JOURNAL A. M. A., March 19, 1910) states:

"Although passiflora was introduced into medicine nearly seventy years ago, the literature concerning it is not very extensive; it is not mentioned in the standard works on pharmacology and its chemistry seems never to have been worked out. There appears, also, to be no record of experimental investigations of the drug with reference to its pharmacologic action, except an article by I. Ott (*Med. Bull.*, 1898, xx, 457) who used 'Daniel's concentrated tincture.'

"Extravagant and inconsistent claims are made for Daniel's concentrated tincture of passiflora in the advertising literature, where it is recommended for such a wide range of diseases as asthma, typhoid fever, convulsions and paralysis.

"None of the evidence is sufficient to show that passiflora has therapeutic value; hence it is deemed inadvisable to include this drug in the list of nonofficial remedies."

THE NEW CONSCIENCE

In this country the public attitude toward things that hitherto have been tolerated is bound to undergo many changes. What *Collier's* said about "Mr. Morgan's Case" can be so aptly paraphrased that we have set it out below:

"It may help Mr. Morgan [Mr. Patient] to understand if his case is stated by analogy, and in a shape that will appeal to his own experience. He would discharge his chauffeur [his physician] if he should find him to be a partner in the garage [drug-store] that is supplying . . . the gasoline [medicine]. And he would discharge him because of the nature of that relation, without inquiring into specific transactions, or making any charge of dishonesty. It is an axiom of fundamental business ethics that the purchasing agent of a firm [the prescriber of medicines] shall not have a profit-sharing interest in any of the concerns from which he buys supplies [orders medicines]. For how can he be faithful to both trusts? If he is faithful to his employers, he must get the lowest possible prices; if he is faithful to his associates, he must get the highest possible prices. [If he is faithful to his patients, he must use what is best in each particular case; if he is faithful to his pharmaceutical firm, he must use its drugs in every possible case]. If he is faithful to either, he must necessarily be disloyal to the other. This is so simple that every business man understands it. It is an axiom not merely of business ethics, but of law as well. . . . What Mr. Morgan fails to realize is that this relation between buyer and seller is not permissible, wholly regardless of any charge of unfair dealing."

When such relationships are forbidden by law, physicians will, of course, obey the law; but physicians ought to be ready to avoid now what is morally wrong, and not to wait until it is made legally wrong. It behooves us to see that the business world, which formerly was given so much license to deceive, is not allowed to occupy the road alone in its march toward higher and better standards of right and wrong.

BIOSOL

Dr. A. N. Lakin, State Line, Ind., writes:

"Kindly advise me concerning Biosol. I am sending you herewith a pamphlet describing this product. On the last page note clinical report from Dr. Buchman of the Indiana Medical Association and president of the Department of Public Health, Fort Wayne, Ind."

H. Hille, once of Heidelberg, now of Oak Park, Ill., having reached the conclusion that mineral starvation is the cause of all diseases, devoted his talents to finding a remedy. He claims to have found it and calls it "Biosol." He published his discovery in a pamphlet entitled "Facts of Modern Science," and recently published an article in the *Medical Record* giving his ideas on this mineral point of view. Biosol is an indescribable mixture of alcohol, carbohydrates, and many and various mineral bodies—ranging all the way from sodium, potassium, calcium and magnesium to silicon, copper, uranium and thorium—the amount of each being in most cases extremely minute. It is said to be a valuable food as well as medicine. A dose of this food might keep a rabbit alive for several hours, and a man who could stand the expense and escape death from delirium tremens might live on three quarts of the mixture per day. Human beings have little occasion to fear mineral starvation, and may obviate whatever danger there may be with a drink of milk. Like other living creatures, we may be thankful that we are furnished in our own bodies with a living bioplasm which can use the minerals of the waters and the rocks and which has its own laboratory in which to prepare organic compounds to suit its needs.

Correspondence

The Freudians and Imaginative Literature

To the Editor:—In Dr. Isador Coriat's letter (THE JOURNAL, Feb. 8, 1913, p. 464) in reply to my letter entitled "The Excesses of the Freudian School" (THE JOURNAL, Jan. 25, 1913, p. 307), he discloses several points of view which seem to me to involve some principles so fundamental, not only for this, but also for every discussion of the subject, that I crave the indulgence of your columns once again to consider them.

Dr. Coriat first quotes a portion of a sentence of mine as if it were the whole. What I wrote was: "How much of all that we have heard lately about the sexual etiology of psychoneuroses is true, I personally am frankly not in a position to judge." This is true for several reasons, to wit: Some years ago under the inspiration of a distinguished townsman of Dr. Coriat's, I became immensely interested in the conscious application of psychic methods of treatment to functional nervous disorders. I followed, and still follow particularly the methods of Du Bois, and the isolation persuasion scheme of Dejerine. Later I naturally was stimulated by the studies of Jung on reaction-times in such subjects and in the very suggestive theories of Freud. I used them, somewhat crudely perhaps, but as best I could in the absence of any one else in my community who appeared to know any more about them than I did, on various patients with various degrees of success. I had some quite astonishing therapeutic successes; but when I examined these results critically, I became somewhat skeptical as to the connection between the cure and the treatment, just as I might be skeptical of the connection between the cure and the anchoring of a floating kidney, or Christian Science, or washing out the stomach. I therefore felt that I had a right to suggest that until I had examined a number of the cases that other men had cured I was not in a position to judge as to just how much of it all was true. I added that I was most loath to believe in many instances that a very good case had been made out in print.

Dr. Coriat says that the opinion of so ill-informed a critic would not be tolerated in any other branch of scientific medicine. His irritation is inapt. My opinion, for instance, about pityriasis rubra pilaris might not be tolerated in any group of dermatologists. But if I had pityriasis rubra pilaris I imagine that certain phases of my opinion would not only be tolerated, but would be listened to with considerable interest. When it comes to the question of psychanalysis we are dealing with mental states. And whether Dr. Coriat believes it or not, I possess mental states. I have had emotions. I have had experiences. I have had dreams. So that when he and his fellow-workers advance a hypothesis to account for the origin of certain mental states, of certain experiences and of dreams, he is talking about something for which I have a standard which is for me the most real thing in all the world—namely, my own mental life. And all that he can reasonably ask of me or of any man besides this, before we form an opinion, is a due appreciation of the issues involved and a certain critical ability to weigh facts which a common education is supposed to impart.

The real point under discussion, however, was the wisdom that Freud's disciples display in analyzing characters in

imaginative literature. It may be admitted that some advantage is gained by analyzing characters so universally conspicuous as Hamlet or Lady Macbeth; and furthermore, the propriety of using some isolated action or speech of those creations to point a moral or adorn a tale may again be granted. It seems quite proper, too, that such a study as that of Wagner's "Flying Dutchman," in which it is shown that certain of Wagner's early emotional experiences creep out again in his work, should be undertaken, for here we are dealing with the actual facts of an actual human life. But it was suggested that all this advantage is doubly lost when we are confronted with the pedantic spectacle of a neurologist soberly sitting down to review Lady Macbeth's whole life and explain her somnambulism on the ground of an unconscious repressed wish for a child, because in the inevitable twisting which the words of an imaginative creation would necessarily require a suspicion might arise of the methods employed in other instances. This objection Dr. Coriat meets squarely. He says that "the psychopathologist is in a far better position to judge and interpret abnormal characters in literature than is the literary critic, who has had neither medical nor psychopathologic training. . . . Shakespeare's intuitive insight in creating these characters, so true to what is seen to-day in neurologic clinics, must ever be a source of admiration concerning the accuracy of his astonishing genius." No one who speaks the English language need pause to express his admiration for Shakespeare; but to say that Shakespeare actually anticipated the researches of the modern laboratory psychologist is on a par with saying that because Brutus tells Portia that she is as dear to him as the ruddy drops that visit his sad heart, Shakespeare anticipated the discovery of the circulation of the blood.

We must be quite clear about what is meant by this. It will not do to assert that in a sort of general way these characters show some of the symptoms we see in nervous patients to-day. It means that Shakespeare deliberately and consciously molded these symptoms on the basis of a theory of subconscious sex association. And nothing else will do. Otherwise the whole thing falls to the ground. Dr. Coriat seems to think that whether Shakespeare was conscious of the modern ideas or not makes no difference so long as psychanalytic interpretations can be read into the plays. It seems to me that he is confused. A turn, a phrase, a line of a play may arouse in me emotions or thoughts or insight into modern institutions, of which Shakespeare was certainly not conscious. But there we are dealing with emotional or esthetic life. In the present case we are dealing with science, endeavoring to ascertain the relation of cause and effect. One cannot assert that these creations are beautiful examples of the operation of a certain set of causes if their creator was unconscious of that set of causes and of its operation.

When we come to examine Macbeth in the light of this clarification of ideas, what justification do we find for the belief that Shakespeare intended Lady Macbeth's somnambulism to be the result of an unconscious repressed desire for a child? I can hardly think it unreasonable to ask that if a man starts to prove such an assertion he should at least first clear the decks by concerning himself with the question as to whether Lady Macbeth had a child or not. But this trivial matter Dr. Coriat does not trouble himself to consider. There is as a matter of fact not one single jot of positive unquestionable proof that Lady Macbeth was childless, either in the play itself or in Holinshed. There is, indeed, the negative evidence, that no child of hers walks on the stage. But in the first act we find her talking to her wavering lord, weakening in his determination to kill the king, reminding him that he is sworn and then flaring out in that burst of magnificent passion:

> I have given Sucke, and know
> How tender 'tis to love the Babe that milks me,
> I would, while it was smyling in my Face
> Have pluckt my nipple from his Boneless Gummes
> And dasht the Braines out, had I so sworn
> As you have done to this.

To a plain, blunt man not versed in that uncanny knowledge which is denied literary critics and is the common property of Freud's students, it would appear that this passage indicated that Lady Macbeth had a child. And if so, then it would appear that she would hardly suffer from a repressed desire for a child. Not so with Dr. Coriat. He quotes in his book, "The Hysteria of Lady Macbeth," this very passage. It appears to give him no trouble. He apparently does not consider that it needs explaining. He serenely informs us that "the theme of childlessness is here revealed for the first time." Did ever in the history of human thought the theme of childlessness wear so queer a garb?

It is all this which makes us wonder whether the Freudians ended with a theory or began with one—whether they examined the facts and built a hypothesis, or whether they built a hypothesis and examined the facts. For it has seemed clear for many years that in Lady Macbeth Shakespeare's intuitive insight into the human soul intended to show that the conscience of a murderess was an uneasy bedfellow, that the thing which drove her to wander while she slept was an old sin which came to haunt her slumbers. It was the blood of Duncan on that little hand which all the perfumes of Araby could not sweeten. And if there is any meaning in anything, this tragedy means that Shakespeare believed that a repressed knowledge of murder could be the cause of somnambulism and of hysteria. It is just this that is so exasperating in the Freudian school. There is a plain explanation, and they will none of it. It is this eternal harping on sex as if it were the only thing in life. It is not even the greatest thing in life. Self-preservation is the first law of Nature. We have all along been prepared to accept the principles of Freud's teaching. They have been illuminating beyond measure, and, it were presumption to add, in large part true. But they are not the key to all history or the touchstone to all life. To say that there is only one kind and quality of love in the world and that sexual love—that a son's love for his mother, a daughter's love for her father is all sexual; that if one man loves another man he loves only the womanly qualities in him, that if a man goes about his work in the world, he goes with the hope of female approbation—this is to invite an answer which by its very qualities is difficult to formulate. It is difficult to formulate because the answer to all that is the sober common sense of the average man.

Dr. Coriat makes one other final illuminating remark. "It is a proof, too, of the soundness of Freud's fundamental contributions to psychopathology, when it can be shown that the mental mechanisms of unconscious complexes, repression, dissociation and mental conflicts are the same for hysteria and the anxiety neuroses as for such purely fictitious creations as the mental disease of Hamlet and Lady Macbeth." If this be proof, he has made the most of it. But it is only proper to inform him that that kind of proof would not be tolerated in any other branch of scientific medicine.

LOGAN CLENDENING, M.D., Kansas City, Mo.

A Simple Substitute for Kuhn's Aspiration Mask

To the Editor:—Permit me to vouchsafe a bit of valuable information for the benefit of your readers in regard to Kuhn's aspiration mask. It may not be generally known that all the beneficial results of the mask can be secured in a much simpler manner by using a section of a small catheter, about No. 16F, or a straw or quill to draw the breath through, thus retarding inhalation quite as effectually as by use of the cumbersome mask; but such is the case. The only benefit of the mask is to insure a deep, full inspiration of air slowly and gradually, holding it a few seconds and then its sudden expiration, which, as you remark (THE JOURNAL, Feb. 22, 1913, p. 632), produces negative compression of the lungs, sucking the blood from the right chamber of the heart into the lungs. When the heart is weakened and tired by overexertion for instance, and there is pain from overdistention of the right chamber, if the patient will lie down for five minutes and breathe in that manner through a quill toothpick or even through his teeth, the relief experienced will be immediate and most remarkable. I have often practiced it myself for nervous excitement and insomnia, usually falling asleep before the

expiration of the five minutes, when otherwise I might lie and count the strokes of the clock for hours. For many years it has been my custom to instruct anemic and nervous patients to practice the method for five or ten minutes on first lying down at night, without explaining the reason further than to say that it would expand the chest. It may also be practiced when sitting at a desk or reclining in an easy chair, and it really does oxygenate the blood and improve the breathing capacity of the chest.

T. W. WILLIAMS, M.D., Milwaukee, Wis.

Athletics and Health

To the Editor:—Permit me to commend the stand which you take in your editorial on athletics, February 8, particularly your expression with regard to the value of such sports as may be continued after a man's college course is completed. In these matters I feel sure that men engaged in physical education are glad to have the opinions and cooperation of men who are engaged in the general practice of medicine.

DUDLEY B. REED.

Medical Examiner, Division of Physical Culture and Athletics, University of Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VASECTOMY; TECHNIC AND EFFECT ON SEXUAL INTERCOURSE

To the Editor:—1. Please let me know the technic of vasectomy as it is performed for the sterilization of criminals.

2. What effect does the operation have on the ability of the individual to have sexual intercourse, other than preventing the ejaculation of spermatozoa? L. W. HOWE, M.D., Coldwater, Mich.

ANSWER.—1. The technic of vasectomy was described by H. C. Sharp in THE JOURNAL, Dec. 4, 1909, p. 1897, as a means of preventing procreation in defectives. The subject was discussed in THE JOURNAL, Sept. 30, 1911, p. 1152, where a considerable bibliography is given. Sharp describes the technic as follows:

> After cleansing the scrotum with soap and water I bathe the part in alcohol, then grasp the spermatic cord between the thumb and the index-finger of the left hand, detect the vas, hold it firmly and fix it with a pair of bullet forceps, then cut down on it, draw it through the scrotal wound by means of a tenaculum hook, strip it of all membranes and the accompanying artery, ligate above and sever, cutting away any portion from the vas that may have been damaged in the manipulation. This is done in order that the end next to the testicle may not become closed. It is very important that it shall remain open, in order that the secretion of the testicle may be emptied around the vessels of the pampiniform plexus and there absorbed, for it is through this process that the economy receives the tonic effect of the secretion; also where the end closes there is likely to be cystic degeneration. The action of the muscle closes the skin wound and no stitch, collodion or adhesive plaster is needed. The patient returns to his work immediately and suffers but little inconvenience.
>
> The operation in the female is more difficult, but, if skilfully done, no more hazardous. The oviduct is reached through a median incision, the tube ligated near the uterus and severed beyond the ligature.

2. It has no other effect.

A report of a supreme court decision upholding vasectomy is given in the Medicolegal Department of this issue of THE JOURNAL.

FETAL DEFORMITIES OR DEFECTS NOT DUE TO UNSUCCESSFUL ATTEMPTS AT ABORTION

To the Editor:—If a pregnant woman injects into the gravid uterus, by means of a small rubber syringe, turpentine or other irritant which fails to produce abortion, will this attempt have any effect on the growth and development of the fetus? If the fetus is carried to full term will the child be normal or is it liable to birthmarks and deformity? Is the amniotic fluid sufficient protection?

M. F. DAUBENHEYER, M.D., Butlerville, Ill.

ANSWER.—There is still a widespread belief among both the laity and the medical profession that attempts at abortion which do not lead to the expulsion of the egg may in some way injure it so as to cause birthmarks or other deformities. Scientific clinical observation or experiment furnishes little or no basis for this belief.

The theories of the causation of monstrosities may be classified roughly as follows:

1. Supernatural and fantastic theories. These include those theories that assume as factors the influence of gods or evil spirits, hybrid unions and mental impressions.

2. Theories based on trauma and pressure. These assume that the embryo or fetus is affected by maternal traumatism or injury due to falls or blows or tight corsets, or to internal pressure from pelvic tumors or intra-uterine pressure. That some fetal injuries may be due to external violence is true, and that certain deformities may be due to pressure of the containing sac as in ectopic pregnancy there can be no doubt; but this theory cannot explain the common monstrosities like anencephalus, etc.

3. Amniotic theory. According to this theory inflammation of the amnion leads to the formation of amniotic bands that interfere with fetal development. In this group of factors might be placed placentitis, which was held by Simpson to be an important factor in causing deformity. Inflammation of the placenta might naturally spread to the chorion and amnion. Under this head could be included intra-uterine injections and other methods of inducing abortion which supposedly might cause inflammation of the placenta. The existence of placentitis is nowadays not considered well established as a specific disease, and its relation to the amniotic theory is only conjectural. Moreover, the amniotic theory is largely displaced by the fourth, or embryologic, theory.

4. This theory postulates a disordered embryology or a disturbed ontogenesis and organogenesis. According to this theory most deformities are due to arrested development of parts or organs of the embryo or of the adnexa.

In any case the common deformities date from the embryologic period; that is, from the first forty days of pregnancy, and probably more often from the first half of this period. Hence any teratogenetic effect of attempts at abortion can hardly be assumed to occur after the first four to six weeks of pregnancy.

It cannot be denied that injury to the placenta or fetus from an attempt at abortion might interfere with its growth and lead to general undevelopment. That is doubtful, however, and not in accord with general observation. As a rule a patient may be assured that if an attempt at abortion fails she need have no fear about the baby. In many thousands of instances perfect children have been born after unsuccessful attempts at abortion. The fear that the child might be deformed is unjustified and is absolutely no reason for the induction of abortion.

BOOKS GIVING TECHNIC FOR DETERMINING COAGULATION-TIME OF THE BLOOD

To the Editor:—Please give me the technic of a simple, accurate method of determining the coagulation-time of the blood.

W. H. SMITH, M.D., Goldsboro, N. C.

ANSWER.—Good methods can be found in recent works on clinical diagnosis, such as Webster's "Diagnostic Methods" published by Blakiston's Son & Co., Philadelphia, at $4.50; Wood's "Chemical and Microscopic Diagnosis" published by Appleton & Co., New York, at $5, or Simon's "Clinical Diagnosis," published by Lea & Febiger, Philadelphia, at $5. A simple instrument for determining the coagulation-time of the blood is described by W. W. Duke in the *Archives of Internal Medicine*, February, 1912, p. 258.

GUIDES TO WATER ANALYSIS

To the Editor:—Please refer me to a guide to water analysis.

DAVID L. HEDBERG, M.D., Leaf River, Ill.

ANSWER.—There are three excellent books on water-supply, two by English writers (Savage: "The Bacteriologic Examination of Water-Supplies," and Horrocks: "Bacteriologic Examination of Water"), and a third by the American investigators, Prescott and Winslow (published by John Wiley and Sons). These books discuss the interpretation as well as methods of bacterial water analysis. "The Standard Methods of Water Analysis," published by the American Public Health Association, gives both chemical and bacterial methods in detail with many references. It should be added that at least as much skill is needed in the interpretation of water analyses as in the technical execution itself, and that an inexperienced observer is liable to draw false conclusions from his analytic data.

MEDICATION BY THE RECTUM

To the Editor:—1. On page 557 of THE JOURNAL, Feb. 15, 1913, is a mention of an article "Medication by the Rectum," by A. Guérin (*Journal de médecine de Bordeaux*, November 17, xlii, No. 46). Does this article give any directions for using remedies by the rectum for systemic effect? If so, please give further details.

2. Please give references to text-books on rectal medication.

A SUBSCRIBER, Oklahoma.

ANSWER.—1. This article was not abstracted, as Guérin does not seem to have personal experiences to report with medicinal rectal injections except in respect to morphin. This has taught him that morphin addiction is possible by all routes. He cites a few authorities, but in a vague, general way. Sodium salicylate by the rectal route is mentioned only as having been used by Seibert, who gave in cerebrospinal meningitis 1 gm. in a tablespoonful of water to a total of from 4 to 10 gm. a day in rectal injection. The chief point which Guérin makes is the superiority of a very small injection, from 1 to 5 or 15 c.c., that is, 2 or 3 teaspoonfuls or less, injected with a syringe with a capacity of not over 6 or 15 c.c. possibly with a cannula or short rubber tube slipped over the tip. He quotes several writers who warn that mercury and quinin should never be given by the rectum. He knows of two instances of children dying after the use of suppositories containing the usual therapeutic dose of quinin. The rectal mucosa seems to be peculiarly sensitive to quinin. The lower part of the rectum seems to have the greatest absorbing power. The fluid should be tepid, injected when the intestines are at rest, some time after a cleansing enema, and the patients must be explicitly instructed anew that the medicinal injection is to be retained. Renaut found Fowler's solution irritating to the rectum and changed to sodium cacodylate, which he declares is superior to all other preparations of arsenic for rectal injection. Guérin's formula for morphin is 0.1 gm. morphin in 150 c.c. of distilled water, injecting 15 c.c., or 0.12 gm. in 60 c.c. water, injecting only 6 c.c. He advises injection of a small amount of laudanum to precede a nutrient enema instead of adding the laudanum to it.

2. We do not know of any book devoted to rectal medication. There are references in the various works on therapeutics. In general, it is believed that absorption from the rectum is less active than from the stomach and upper intestine. For this reason the doses of remedies for rectal use are usually given as somewhat greater than those administered per os.

INFLAMMATION OF THE GALL-BLADDER

To the Editor:—In March, 1912, I operated on a patient for empyema of the gall-bladder following typhoid fever. Bile flowed for a few days. A free flow of mucus continued until the sinus closed, when great pain developed in that region, relieved only by reopening of the sinus. There would be a copious discharge of mucus and no more pain until the sinus closed again. It has been noted that each time the sinus closed and pain developed, reopening of the sinus would bring away a smaller amount of mucus. There is no pain at any time except when the sinus closes. The flow of mucus being so much less now, the sinus closes much more frequently.

Will Nature eventually cause such a shrinking of the gall-bladder that the mucous fistula will heal spontaneously if the fistula is kept open? Is there any local treatment that may be used to hasten the desired end?

M. V. S.

ANSWER.—In this case the trouble lies in the fact that the inflammation of the gall-bladder has not subsided entirely. Therefore when the opening closes the symptoms recur. The drainage should be continued until the surface of the mucous membrane of the gall-bladder is perfectly smooth and pink in color. This is determined by a cystoscopic examination of the gall-bladder. As soon as the inflammation subsides, drainage may be dispensed with and the patient will not have pain when the opening closes. There is no local treatment which will hasten the desired end.

THE PURSUIT OF EMPTY HONORS—THE ITALIAN PHYSICO-CHEMICAL ACADEMY

To the Editor:—I enclose some printed circulars I received. The "academy" from which they come appears to me like a fake, and if such it proves to be, publication of some announcement might save many physicians from being imposed on.

F. W. FOXWORTHY, M.D., Indianapolis.

ANSWER.—One of the impressive circulars referred to would lead the innocent reader to believe that he has been nominated for the honor of being elected to membership in the Italian Physico-Chemical Academy. He is told that a handsome diploma will be forwarded to him, but first, of course, there is—ahem!—the slight incidental formality of the payment of a specified fee. This fake "scientific" organization, along with some other similar diploma-mills, was discussed in THE JOURNAL, Oct. 21, 1911, pp. 1373 and 1380.

The wish to display tokens of loyalty to an organization which actually has an aim and a work springs from a trait in human nature of which no one need feel ashamed; but it is characteristic of children and of naive grown-ups to delight in trumpery decorations like the souvenirs distributed by advertisers and the degrees and medals ground out by diploma-mills. It is often amusing to see the meaningless diplomas and absurd titles which physicians sometimes secure for a few dollars and treasure as if they were guerdons of scientific achievement, even framing them and hanging them in their offices—why? Is it to impress the unsuspecting public? Of course, a foreign diploma is especially valuable for this form of quackery.

HYDROPHOBIA AND RABIES

To the Editor:—Please print a list of articles on hydrophobia and rabies published in THE JOURNAL, and the names of any books on the same subject.

T. B. ENDERS, M.D., New York.

ANSWER.—In addition to Moore's "Pathology of Infectious Diseases of Animals," 1906, the following original articles and editorials which have appeared in THE JOURNAL may be referred to:

Rabies in 1911, editorial, THE JOURNAL, July 27, 1912, p. 282.

Cumming, J. G.: Hydrophobia, with Report of a Case, THE JOURNAL, May 18, 1912, p. 1496.

Hanson, Henry: Rabies in a Human Being, with Post-Mortem, THE JOURNAL, Dec. 23, 1911, p. 2064.

Stimson, A. M.: Controlling Hydrophobia in the Human Subject, THE JOURNAL, Sept. 30, 1911, p. 1128.

Moon, S. B.: Microscopic Diagnosis of Rabies; a Modification of Van Gieson's Method of Staining the Characteristic Nerve-Cell Inclusions, THE JOURNAL, Aug. 26, 1911, p. 735.

The Pathology of Rabies, editorial, THE JOURNAL, May 14, 1910, p. 1617.

Hydrophobia, editorial, THE JOURNAL, March 3, 1910, p. 799.

Frothingham, L.: The History, Prevalence and Prevention of Rabies and Its Relation to Animal Experimentation, THE JOURNAL, March 5, 1910, p. 780.

Stimson, A. M.: Antirabic Serum, THE JOURNAL, Jan. 22, 1910, p. 266.

Kerr, J. W., and Stimson, A. M.: The Prevalence of Rabies in the United States, THE JOURNAL, Sept. 25, 1909, p. 989.

Rucker, J. B.: The Smear Method as a Means of the Rapid Diagnosis of Rabies, THE JOURNAL, July 25, 1908, p. 288.

Rabies in Great Britain and in America, editorial, THE JOURNAL, Oct. 24, 1908, p. 1428.

The Specific Treatment of Rabies, editorial, THE JOURNAL, Feb. 29, 1908, p. 691.

The Negri Bodies in Hydrophobia, Query and Minor Note, THE JOURNAL, Jan. 11, 1908, p. 140.

Hydrophobia, editorial, THE JOURNAL, May 16, 1908, p. 1612.

LITERATURE ON ANAPHYLAXIS

To the Editor:—Please give me references to recent work on anaphylaxis.

J. R. BLACKMAN, M.D., Hastings, Neb.

ANSWER.—The following may be referred to:

Schultz, W. H.: Physiologic Structures in Anaphylaxis, Hygienic Laboratory Bull. No. 80, 1912.

Anaphylaxis, editorial, THE JOURNAL, April 22, 1911, p. 1199.

Friedberger, E.: Anaphylaxis, Deutsch. med. Wchnschr., March 16, 1911; abstr., THE JOURNAL, April 22, 1911, p. 1232.

Infection and Anaphylaxis, editorial, THE JOURNAL, March 11, 1911, p. 746.

Grinnan, S. G. T.: Anaphylaxis, THE JOURNAL, Jan. 20, 1912, p. 178.

Meilliere, G.: Anaphylaxis, Med. Press and Circular, Dec. 6, 1911.

Shaw, H. B.: Anaphylaxis in Relation to Certain Clinical Manifestations, Practitioner, London, December, 1911.

Hektoen, L.: Allergy or Anaphylaxis in Experiment and Disease, THE JOURNAL, April 13, 1912, p. 1081.

Anaphylaxis, Paris Letter, THE JOURNAL, Nov. 16, 1912, p. 1807.

Gallagher, J. F.: Anaphylaxis, Jour. Tennessee State Med. Assn., October, 1912.

The volume "Infection, Immunity and Serum-Therapy" by Ricketts, published by the American Medical Association at 82, has chapters on anaphylaxis, besides taking up all the other ramifications of this general subject in detail.

HAIR-SPLITTING IN HYPERTRICHOSIS

To the Editor:—In THE JOURNAL (Feb. 22, 1913, p. 617), the question is asked about splitting of the hair in hypertrichosis. Is it possible that J. J. S. S. has a case of hypertrichosis mixed with fragilitas crinium, or has he given the disease the wrong name?

H. SCHMIDT, M.D., Addieville, Ill.

ANSWER.—The query of J. J. S. S., we understand, really refers to fragilitas crinium in hypertrichosis, and it was answered with this interpretation. We find no positive statement that fragilitas crinium is likely to occur in hypertrichosis, but we see no reason why it might not, so there is no necessity for confusion in the names of the diseases.

V. 6
1913

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

PRESIDENT'S COMMISSION FAVORS HEALTH SERVICE

One of the questions most warmly discussed before the Senate Committee on Public Health and National Quarantine was that of the advisability of organizing an indep ndent health service. President Taft referred this question to the President's Commission on Economy and Efficiency, to consider the possibility of organizing such a service by transferring to an independent organization a number of the existing bureaus and divisions, as provided by the Owen bill. The report of this commission, recently printed as Senate Document 1002, is an endorsement of Senator Owen's plan, as an economical and efficient solution of the problem of governmental health activity. The report should be read by all interested in this subject. The substance of it is given below:

ESTABLISHMENT OF AN INDEPENDENT PUBLIC HEALTH SERVICE

The Commission on Economy and Efficiency has undertaken to investigate the various government services having to do with matters pertaining to public health, and submits the following preliminary report on the advisability of establishing a government service independent of existing executive departments, to have charge of those activities that pertain to the public health.

The recommendations of the commission on this subject are:

1. That provision be made by law for the establishment of an independent Public Health Service.

2. That provision be made in the law creating that service for the transfer to it of bureaus or divisions in the executive departments concerning which there is no doubt as to their distinct public health purpose, and among those the following: (*a*) the Bureau of Public Health and Marine-Hospital Service, now under the Department of the Treasury; (*b*) the Bureau of Chemistry, or that part of it charged with the investigation of the adulteration of foods, drugs and liquors, and with the execution and enforcement of the act of Congress entitled "an act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes," approved June 30, 1906, now in the Department of Agriculture; (*c*) the Division of Vital Statistics, Bureau of the Census, now in the Department of Commerce and Labor.

3. That provision be made in the law for the grant of authority to the President to transfer to said Public Health Service the whole or any part of any bureau, division, or other branch of the government engaged in work pertaining to the public health except the Medical Department of the Army and the Bureau of Medicine and Surgery of the Navy, when on investigation he is of the opinion that it will be for the best interests of the public to make the transfer.

4. That provision be made also for certain new bureaus under said Public Health Service to take charge of lines of work not covered by other subdivisions of said services or other bureaus, divisions, or branches of the government.

5. That the director of the Public Health Service be authorized, with the approval of the President, to rearrange the organization and work of the several bureaus and divisions covered by his service in such manner as will bring about a better coordination of said subdivisions.

6. That provision be made by the law for the transfer of funds appropriated with each service transferred and for the apportionment of funds for each bureau or division rearranged by the director of the service.

The foregoing recommendations represent the conclusions which have been reached by the commission as the result of its study of the work now being done in the several executive departments in the protection and promotion of the public health. In other reports the commission has emphasized the economy and efficiency to be attained through the bringing together under the same general direction of those services whose activities fall within the same field.

The commission has studied in detail the work of the several services and branches of the government having to do with matters of public health, and has reached the conclusion that until the several bureaus and divisions are brought together under a common direction it will be impossible for the government to have a definite health program which is adapted to the needs of the people or for public health matters to receive the attention their importance deserves, nor can the existing services accomplish the results that should be obtained from the moneys expended in their maintenance and operation.

The creation of an independent Public Health Service is recommended by the commission in order to accomplish three purposes: (1) to insure that a work of such commanding importance to the people will receive the special attention that it deserves, (2) to provide an organization best adapted to doing health work, and (3) to relieve existing departments of duties in no way germane to their chief functions and which therefore detract from rather than add to their efficiency.

In respect to the first of these points the commission is influenced not only by the importance and variety of the work now being done by the government in this field, but by the certainty that public opinion will demand that the government do much more each year. It may be said that only within recent years has the country been aroused to the importance from the national standpoint of the subject of public health. That this awakened interest must lead to the assumption by the national government of new duties and responsibilities in this field is almost certain. It is not necessary, however, to base a recommendation for an independent Public Health Service on future needs. At the present time the operations of the government in this field are sufficient to warrant the creation of an independent service to care for them. In the Marine Hospital, quarantine and immigrant inspection work of the Bureau of Public Health and Marine-Hospital Service of the Treasury Department; in the scientific research work done in that bureau; in the enforcement of the pure food, drug and liquor act, through the Bureau of Chemistry of the Department of Agriculture; in the comprehensive efforts being made by the Division of Vital Statistics of the Bureau of the Census, Department of Commerce and Labor; and in the special work being done by various other subdivisions the government is now doing work pertaining directly to public health and sanitation, and that work requires the maintenance of elaborate services and the expenditure of millions of dollars annually.

The commission has considered the question as to whether the advantages to be derived from the correlation of these several services could not be secured by assembling them under some one of the existing executive departments. Such examination, however, has convinced the commission that this would not reach the end desired unless all the activities which are not directly related to health work be first transferred from such department. It believes that the attempt to group these several services under a department whose major interest would be in other fields would result in little, if any, improvement over existing conditions. At the same time the commission recognizes the inadvisability of adding to the number of executive departments if such action can be avoided. It is for this reason that it recommends the creation of a service which, while independent of other departments, will not itself have the status of a department unless after such a service has been developed and a better basis exists for judgment it is found that an additional department is needed. It may be that by redistribution of activities the same end may be reached without increasing the number of departments.

The services which the commission believes should be transferred by law as subdivisions of the proposed Public Health Service do not represent all of the bureaus, divisions and subdivisions performing work in connection with the public health and sanitation. There are a number of other services whose activities, in whole or in part, fall in this field. These other services have grown up, however, as parts of organizations created for the performance of work in fields other than that of public health and sanitation. Only a painstaking investigation of the exact nature of the work now being performed by such services and its relation to other activities performed by the bureaus and departments in which such services are located will make it possible to determine whether or not it will be in the interest of economy and efficiency to have such work performed as at present or transferred to and made a part of the Public Health Service. The commission has undertaken detailed studies of the history, organization and activities of these services. Until the results of such studies are available the commission believes that it would be a mistake to transfer the work of such services.

It is for this reason that the commission has restricted its recommendations concerning the services to be immediately made part of the Public Health Service to those few services

concerning the propriety of whose incorporation in the Public Health Service there can be but little difference of opinion. It is satisfied that such further investigation of other services having to do with public health matters will establish clearly that some of these services, or certain parts of their activities, should be transferred to the proposed Public Health Service. The commission accordingly recommends that the act providing for the creation of such Public Health Service should authorize the President hereafter to transfer such other services or parts of services to the independent Public Health Service to be created as, in his opinion, is for the best interests of the public. In making this recommendation the commission has followed the precedent established by the act creating the Department of Commerce and Labor.

The commission believes that similar provision should be made in the act providing for the establishment of an independent Public Health Service.

It believes also that the director of the Public Health Service, subject to the approval of the President, should have the same power to rearrange and consolidate the subdivisions of his service that was conferred on the Secretary of Commerce and Labor to rearrange and consolidate the statistical work of the bureaus and offices confided to said department.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 11. Sec., Dr. Charles A. Tuttle, 196 York St.; Homeopathic, New Haven, March 11. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, New Haven, March 11. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

MAINE: City Hall, Portland, March 11-12. Sec., Dr. Frank W. Searle, 776 Congress Street.

MASSACHUSETTS: State House, Boston, March 11-13. Sec., Dr. Edwin B. Harvey, Room 159, State House.

Iowa September Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 11-13, 1912. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 22, of whom 20 passed and 2 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
George Washington University	(1912)	92.1
Northwestern Univ. Med. School (1911) 88.7, 91.5;	(1912)	94
Rush Medical College	(1911) 89,	90.2
College of Phys. and Surg., Chicago (1910) 87, 88;	(1912)	89.2, 93.1
Hahnemann Medical College and Hospital, Chicago	(1912)	78.5, 85.6
State University of Iowa, College of Medicine	(1897)	76
Drake University	(1912)	93.7
University of Louisville	(1912)	78.6
Cornell University Medical College	(1910)	92
St. Louis University	(1912)	88.9
Woman's Medical College of Pennsylvania	(1912)	87.5
Memphis Hospital Medical College	(1912)	79.2
Western University, London, Ontario	(1912)	88.5
FAILED		
Keokuk Medical College	(1892)	39
St. Louis College of Physicians and Surgeons	(1910)	70.1

Michigan October Report

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written and oral examination held at Lansing, Oct. 8-10, 1912. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and not less than 50 in any subject. The total number of candidates examined was 15, of whom 13 passed and 1 failed. For one candidate the credentials have not been completed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Hahnemann Medical College of Chicago	(1891)	76
Bennett Medical College	(1912)	75.1
Rush Medical College	(1912)	81.8
Harvard Medical School	(1911)	82
Baltimore Medical College	(1911)	84.6
University of Michigan, Dept. of Med. and Surg.	(1903)	79.7
University of Michigan, Homeopathic College	(1912)	79.9
Saginaw Valley Medical College	(1899)	79.5
Bellevue Hospital Medical College	(1897)	77.4
University of Pittsburgh	(1911)	83.3
Laval University, Quebec	(1902)	*80.8
University of Athens, Greece	(1895)	*91.8
Royal University of Palermo, Italy	(1902)	*87
FAILED		
Detroit Homeopathic College	(1910)	64.4

* Including allowance for years of practice.

Alabama January Report

Dr. W. H. Sanders, chairman of the Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 14-17, 1913. The number of subjects examined in was 10; total number of questions asked, 98; percentage required to pass, 75. The total number of candidates examined was 68, of whom 46 passed including 1 osteopath and 22 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Birmingham Medical College (1907) 80; (1911) 81; (1912) 75, 75, 78, 79, 79, 79, 80, 80, 82, 83.		
University of Alabama (1910) 80; (1911) 77; (1912) 75, 75, 76, 77, 78, 78, 80, 85, 93.		
Atlanta College of Physicians and Surgeons	(1912)	78
Atlanta School of Medicine	(1912)	78
Chicago College of Medicine and Surgery	(1912)	75
Rush Medical College	(1907)	88
American Medical Missionary College	(1910)	78
Kentucky School of Medicine	(1902)	75
Tulane University of Louisiana	(1912) 79, 89,	90
Columbia University, College of Phys. and Surg.	(1896)	75
Ohio-Miami Medical College	(1912)	84
University of Pennsylvania	(1910) 82; (1911)	81
Chattanooga Medical College	(1908)	78
Memphis Hosp. Med. Coll. (1910) 78; (1911) 76; (1912) 76,		81
Vanderbilt University	(1912) 82, 83,	84
University of Virginia	(1909)	86
FAILED		
Birmingham Medical College (1907) 62; (1908) 68; (1912) 65, 69, 71, 72		
University of Alabama	(1911) 62, 72; (1912)	68
Southern College of Medicine and Surgery, Atlanta	(1912)	52
Atlanta School of Medicine (1908) 63; (1911) 68; (1912) 57,		70
Tulane University of Louisiana	(1910) 73; (1911)	73
University of Maryland	(1911)	73
Memphis Hospital Medical College	(1911) 73; (1912)	62
University of Tennessee	(1912) 66,	73
University College of Medicine, Richmond	(1911)	73

Washington January Report

Dr. F. P. Witter, secretary of the Washington State Board of Medical Examiners, reports the written and oral examination held at Spokane, Jan. 11, 1913. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75 and not less than 60 in any one subject. The total number of candidates examined was 40, of whom 29 passed including 3 osteopaths and 11 failed including 1 osteopath. The following colleges were represented:

PASSED		
College	Year Grad.	Total No. Examined
University of Colorado	(1911)	2
Northwestern University Medical School	(1907) (1911)	(1912) 3
College of Physicians and Surgeons, Chicago	(1909)	1
Bennett Medical College	(1912)	1
Drake University	(1897)	1
Tulane University of Louisiana	(1910)	1
Baltimore Medical College	(1910)	1
Detroit College of Medicine	(1906)	1
University of Michigan, Homeopathic College	(1906)	1
University of Michigan, Department of Medicine and Surgery	(1898) (1902)	(1912) 3
University of Minnesota, College of Medicine and Surgery (1905, 2)	(1912)	3
University of Nebraska	(1909)	1
Columbia Univ., Coll. of Phys. and Surg.	(1907) (1910)	2
Cornell University Medical College	(1909)	1
University of Oregon	(1912)	2
Jefferson Medical College	(1909)	1
University of Munich, Germany	(1908)	1
FAILED		
Physio-Medical College of Indiana	(1889)	1
University of Louisville	(1907)	1
Tufts College Medical School	(1909)	1
Detroit Homeopathic College	(1908)	1
St. Louis University	(1904)	1
St. Louis College of Physicians and Surgeons	(1893)	1
University of Buffalo	(1888)	1
University of Pittsburgh	(1911)	1
University of Nashville	(1902)	1
University Siena, Italy	(1909)	1

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Book Notices

MUSCLE SPASM AND DEGENERATION IN INTRATHORACIC INFLAMMATION . . . AND LIGHT TOUCH PALPATION . . . By Francis Marion Pottenger, A.M., M.D., LL.D., Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, Cal. Cloth. Price, $2. Pp. 105, with 16 illustrations. St. Louis: C. V. Mosby Company, 1912.

This book brings together with much additional information what the author has published on the same subject in medical periodicals during the last few years. He believes that more can be inferred than is ordinarily inferred from what is seen on the exterior of the chest, as to whether or not the lungs are involved. He asserts that one properly trained in light palpation can locate organs and lesions within the thorax to an extent not appreciated by most clinicians.

The author points out that, as a result of inflammation within the thorax, muscles on the outside first become rigid through spasm just as the abdominal muscles do under similar circumstances. This spasmodic rigidity is an early sign of intrathoracic disease; in pulmonary tuberculosis at the apex of a lung, for example, it is first noticed in the sternocleidomastoid and trapezius. If muscle spasm is long maintained by chronic disease, the muscle undergoes degeneration, shrinks in volume and becomes softer but often shorter. These changes are usually ascribed to general emaciation, though the author shows that they have a local cause. He explains the mechanism of these muscular changes by the nervous relationship of parts, and describes these fully.

Attention is called to the fact that when there are old tuberculous lesions in the lungs, the patient's head is often bent to the side affected. This is due to shortening of the rectus lateralis because of degeneration. The conditions of "round shoulder" and "stoop" often seen in these patients receive a similar explanation. That a lack of pulmonary elasticity plays a part in producing "lagging" expansion on the most affected side, as generally admitted, is accepted by the author; but he believes that in early stages the spasmodic contraction of muscles which must be overcome, and the imperfect motion of the diaphragm which *x*-rays have revealed, play the greatest part. Flattening of the chest is ascribed first to compression of the chest by the spasm and later to contraction by the degenerated muscles. Pottenger gives a logical explanation of careful observations of the chest in disease, and the book will be of value to all who are keenly interested in physical diagnosis.

THE PROGNOSIS AND TREATMENT OF DISEASES OF THE HEART. By R. O. Moon, M.A., M.D., F.R.C.P., Physician to the National Hospital for Diseases of the Heart; Assistant Physician to the Royal Waterloo Hospital. Cloth. Price, $1.25 net. Pp. 111. New York: Longmans, Green & Co., 1912.

This volume embraces in small space the essential features concerning the prognosis and therapy of diseases of the heart. Most of what is written is to be found in the standard works on practice or in the special works on heart disease. While there is little of the new, the old and tried are clearly set forth, systematically arranged in nine chapters dealing with such topics as aortic disease, mitral and tricuspid disease, myocarditis, angina pectoris, functional affections and heart strain, paroxysmal tachycardia and Stokes-Adams disease, pericarditis, the treatment of special symptoms. This grouping makes for ease of reference. Little is to be found concerning the aids to prognosis and the hints as to treatment afforded by the galvanometer.

DER ENDEMISCHE KROPF. Mit besonderer Berücksichtigung des Vorkommens im Königreich Bayern. Von Dr. A. Schittenhelm und Dr. W. Weichardt. Paper. Price, 9 marks. Pp. 128, with 19 illustrations. Berlin: Julius Springer, 1912.

This monograph contains the results of a collective investigation of endemic goiter in Bavaria. Careful and systematic studies of these cases, particularly as seen in school children, were made by district physicians in the different Bavarian districts and have been worked over into this report. The methods employed, statistical details, maps, etc., make the report convincing as to accuracy. While of greater interest to the German physician because of its local coloring, many of the results have a more general bearing. Thus the investigators find a greater prevalence of goiter in the mountainous districts of Bavaria but cannot trace any very close relationship to the geologic formation of the land furnishing the water-supply. Cretinism they found oftener in the goitrous districts; exophthalmic goiter did not impress them as unusually frequent. Spontaneous disappearance of cretinism was occasionally noted.

The authors feel that the drinking-water does not contain any preformed toxin due to contamination from some special geologic formation. Nevertheless, in the water, especially the water of mountainous districts, is to be sought the causative agent of production of endemic goiter. This agent is regarded as a parasite that up to the present has escaped detection.

HUNDERT TOTALEXSTIRPATIONEN BEI MYOMA UTERI OHNE TODESFALL. Zugleich ein Beitrag zur Technik der Gynäkologischen Laparotomie. Von Hofrat Dr. S. Flatau. Paper. Price, 2.40 marks. Pp. 92, with illustrations. Berlin: S. Karger, 1913.

The rather unusual results of no mortality following 107 total hysterectomies for uterine myoma is the basis for this monograph. As a result, too, of such an excellent outcome, a considerable portion of the report is devoted to the technical features of the operation. The case reports are given briefly, being arranged in a series of charts covering but twenty pages. The patients ranged in age from 24 to 62 years, though only one was over 55, a factor which may go far in explaining the absence of mortality. Twenty-five of the women were single and thirty-six of the married had never borne children. Of those who were mothers, seven had had three children, two had had five each and not more than one had given birth to six children. The hemoglobin estimation varied from 55 to 85 per cent. The heart was affected to any considerable extent in ten cases. Pain and hemorrhage were the chief symptoms. The appendages were involved thirty times, carcinoma coexisted four times, and sarcoma four. In but one of the sarcomatous involvements was there ascites. One uterine and one tubal gestation were found. Aside from the malignant changes, other degenerative processes were observed in eight cases. But eight of the myomas involved the cervix.

A TEXT-BOOK OF GYNECOLOGY. By William Sisson Gardner, M.D., Professor of Gynecology, College of Physicians and Surgeons, Baltimore. Cloth. Price, $3. Pp. 286, with 138 illustrations. New York: D. Appleton and Company, 1912.

As stated by the author in his preface, this volume is designed especially to fill the needs of the busy medical student, and hence does not enter deeply into the various subjects, but treats of each as briefly and concisely as possible, paying especial attention to the more common ailments. The illustrations are line drawings, with some photomicrographs and several photographs of gross specimens. Chapters on examination, technic, postoperative treatment and complications are valuable to the student.

DIE METHODEN DER KÜNSTLICHEN ATMUNG UND IHRE ANWENDUNG IN HISTORISCHKRITISCHER BELEUCHTUNG MIT BESONDERER BERÜCKSICHTIGUNG DER WIEDERBELEBUNGSMETHODEN VON ERTRUNKENEN UND ERSTICKTEN. Von Dr. G. van Eysselsteijn, Direktor des Universitäts-Krankenhauses in Groningen. Mit einem Vorwort von Prof. K. F. Wenckebach, in Strassburg. Paper. Price, 3.20 marks. Pp. 122. Berlin: Julius Springer, 1912.

This little treatise on methods for restoring those who are apparently drowned or suffocated is interesting because of the full historical review of all methods proposed for this purpose from earliest times to the present.

UROLOGISCHER JAHRESBERICHT. Einschliesslich der Erkrankungen des männlichen Genitalapparates. Herausgegeben von Prof. Dr. R. du Bois-Reymond and Others. Redigiert von Prof. Dr. A. Kollmann und Dr. S. Jacoby. Literatur 1911. Paper. Price, 21 marks. Pp. 499. Leipzig: Dr. Werner Klinkhardt, 1912.

This volume contains references to the literature of 1911, grouped in a general way according to subjects. Many of the more important articles are abstracted. An index of authors and one of subjects add greatly to the value of the work.

Society Proceedings

COMING MEETINGS

Alabama State Medical Association, Mobile, April 15-18.
California State Medical Society, Oakland, April 15-17.
Georgia State Medical Association, Savannah, April 16-18.
Maryland Medical and Chirurgical Faculty, Baltimore, April 22-24.
Mississippi State Medical Association, Vicksburg, April 8-10.
Missouri Valley Medical Society, Kansas City, March 20-21.
South Carolina State Medical Association, Rock Hill, April 15-17.
Tennessee State Medical Association, Nashville, April 8-10.

CONFERENCE OF THE AMERICAN MEDICAL ASSOCIATION ON MEDICAL EDUCATION AND MEDICAL LEGISLATION

Held in Chicago, Feb. 24 and 25, 1913

(Concluded from page 691)

Necessity of a Readjustment of Preliminary and Collegiate Education

PRESIDENT HARRY PRATT JUDSON, University of Chicago: There are two conflicting forces at work in training for any profession. The first is, in a profession like medicine the young man must learn the manipulative processes when his fingers and body are flexible, and this involves getting the student early. On the other hand, he has not the breadth and intellectual development which comes from years of study in many things besides the immediate sciences which lead to medicine. On the one hand, we are apt to take a student when he is young, and when his mind is not highly developed and turn him loose in the world as a practicing physician without the proper breadth of training a physician should have. On the other hand, we take him through the secondary school, the college and the medical school, make him an intern, and by the time he is ready to settle down he is pretty far advanced in life.

I have been studying college curriculums of late years, and I find that a large percentage of the contents of these curriculums are nothing but high-school courses. I distinguish between the high-school and secondary work thus: high-school work is essentially elementary in character, and the secondary subjects essentially advanced in character belong to colleges. Colleges teaching elementary French and German are doing the identical thing that is done just as well in good high schools; yet a boy in taking French or German spends two years of elementary work in either of those languages as a part of the course for the bachelor degree. It is high-school work and nothing else. History, English, civics, political science and a lot of other things, as well as elementary courses in physics, chemistry, etc., can be taught in high schools as well as in colleges.

I believe that it is possible to shorten the preliminary and secondary courses of study in such a way that when a man recives his M.D. degree he will not be so old as the average man is to-day when he enters on the practice of medicine. If we open the door of opportunity, I have no fear that our young men will not enter it and make of themselves what they ought to make.

Organization of the Medical School

DR. EDWARD H. BRADFORD, Dean of the Harvard Medical School: The faculty of medicine of the Harvard Medical School, acting under the authority of the university, is grouped into three faculties. It has an academic organization, a medical school, a postgraduate school and a dental school. All of these work under one dean. The school is organized for the purpose of research, for instruction, for clinical teaching, and for what we may call clinical research. In order to do that, it is necessary to have hospital affiliations, and laboratories for research and teaching. Then come the allied hospitals. There are a number of institutions that have been organized for many years with different governing boards and different traditions, and it was necessary to associate them with the Harvard Medical School in such a way that they would work in harmony, giving clinical opportunities for teaching and research. We have been able to make an alliance with these various institutions. The trustees of the hospital recognize that in order to secure proper surgeons and physicians it was necessary to appeal to the whole country. In order to do that, it was necessary to have the stamp which a Harvard University professorship gives. For that reason they have united and have chosen Dr. Christian and Dr. Cushing to take charge of the hospitals. Harvard University has appointed them as professors with salaries, and a hospital has been organized, to be opened within a month or two, which will combine the teaching and clinical research and the care of the patients in the wards. It is within a stone's throw of the medical school. Then there is the Children's Hospital, which has made an alliance with the Harvard Medical School, and is being built close by. The physician and surgeon of that institution cannot be appointed by the trustees of the institution unless he is nominated by the Harvard Medical School. The Samaritan Hospital for chronic cases and the Cancer Hospital are close to the medical school. The Psychopathic Institute, a state-endowed institution for the study of insanity and allied diseases, is under a professor of the Harvard Medical School. The Lying-In Hospital, also closely allied, will soon come within the vicinity of the medical school. The Dental Infirmary is near the medical school. A female hospital is planned, and the land has been purchased within a short distance of the school. A Woman's Hospital is a quarter of a mile away and closely allied, so that within a pistol-shot of the medical school there are these institutions with 680 or 700 beds, and there are other institutions allied to the medical school. The medical profession in Boston is a well-united and harmonious body. If we differ, we differ as men do differ, but we are all united in a desire to advance medical education in the highest and best way.

The Organization of Medical Schools

MR. CHARLES F. THWING, President of Western Reserve University, Cleveland: In the organization of medical schools, two official boards are required and are sufficient. One board, usually called a faculty, is to be concerned with the teaching and scholastic affairs; the other usually called the trustees, is to be concerned with the financial and the non-academic administration. It is not well for those engaged on the medical side to be directly responsible for the financial. The investing of funds, a chief duty on the financial side, is a delicate and difficult undertaking. This duty should be entrusted to men trained in this service and fitted for it. Members of a faculty are not usually so trained and so gifted. The advantage of two boards is found in the ease of making changes; the disadvantages are found in the far too great ease of radicalism. The government consisting of a faculty and one board of trustees seems to promise the best type of wise efficiency and of efficient wisdom. A faculty is to be constituted of the heads of departments. Such officers belong to this body by reason of their official relations. Membership should not usually be extended beyond such a condition. In this organization of the school with its two bodies, a distinction between legislative and executive functions is ever to be laid. The failure to observe this distinction is liable to result in disorder.

In the most important matter of selecting members of the teaching staff, I believe that the most effective method is for the faculty, through a committee, to make nominations. These should be presented by the president to the board of trustees, who, of course, will usually accept and confirm them. In making such nominations and elections the president by virtue of his office is a member of each committee. With him each committee should confer and he should cooperate with each committee, but the president should always be solicitous that the primary responsibility should rest on the committee of the faculty or the board of trustees.

MR. GEORGE EDGAR VINCENT, President of the University of Minnesota, described the reorganization of the school of medicine in the University of Minnesota. He said: Medical education in that state is now unified as there is only one school of medicine. This unification was brought about by absorbing two or three other medical colleges which in the past might be regarded as rivals. Minnesota will do its share in building

up ideals and in upholding the standards by cooperating with other states in so doing.

MR. KENDRIC C. BABCOCK, Washington, D. C.: I agree with President Judson that we should shorten the time that is spent in the earlier years of education, if possible. There is one serious thing, however, that confronts those who are trying to raise the standards of medical education according to the plan in the announcement made by the Association of American Medical Colleges of establishing a four-year high-school course based on eight years in the elementary schools. Some sections of the country are not able to meet that situation. I am much more concerned about the process of selection of material that shall be admitted to colleges than I am with the actual time or unit value.

DR. W. B. CANNON, Boston: The method of reducing the years of training has been suggested before. I would like to ask President Judson whether he sees any way by which the medical profession can bring influence to bear which would result in a reduction in the number of years of study of which he speaks.

PRESIDENT JUDSON: I know of no way except that each man exert his influence on the community in which he lives. My previous remarks had reference to medicine particularly, as this is a medical meeting. With a reorganization of the curriculums, I believe it would be of benefit not only to the medical profession but to all professions and schools.

Hospitals and Their Relationship to Clinical and Postgraduate Medical Teaching

DR. HORACE D. ARNOLD, Boston: There are hospitals which make no real provision for the scientific study of cases. It is impossible to give the patients in such an institution the advantage of modern scientific investigation and treatment; the better grades of physicians cannot be secured for positions on the staff, and the nursing must be on a correspondingly low plane. Such a hospital is neglecting its duty to its patients. On the other hand, there are medical schools which are practically without clinical opportunities. Another essential feature is that the teaching force of the school and the staff of the hospital should be identical. Appointments should be made on the ground of merit alone and should not be limited by local conditions. A strong institution cannot always be built from the men who happen to be located at one particular place. Freedom of choice of the best men, wherever they may be found, conduces to strength in the institution. It is clear that adequate salaries must be paid for such eminent men, who must necessarily devote the greater part, if not the whole, of their time to the service of the combined institutions. Another matter of considerable importance is that such a combination of medical school and hospital should be located in a large center of population. Only here can adequate clinical opportunities be obtained for a good-sized medical school. Close proximity of the buildings of the two institutions is very important. Only in this way can the two institutions work in the fullest cooperation.

The problem of the fifth "hospital" year was ably discussed at this conference a year ago. The consensus of opinion was that it is desirable but not yet practicable. It will be practicable, however, as soon as the hospitals and the medical schools can enter into closer relations. This movement will be greatly stimulated by the investigation of the hospitals which the Council on Medical Education has been authorized to make, with reference to the ability of the hospitals to give systematic training to interns. The fifth "hospital" year will, in my opinion, become a reality in the near future in the best medical schools. As compared with the undergraduate medical school, the graduate medical school must be much more complex and more elastic. The graduate medical school should be open to any licensed practitioner of medicine, for it has a duty to perform to the public. It should extend to any one who is legally permitted to treat the public a chance to improve his medical knowledge. The students then will differ widely, as their medical training and experience have varied. They may be divided roughly into four classes. 1. Well-trained physicians who wish to pursue more advanced studies than are given in the medical school proper, including research. 2. Well-trained physicians who have recently graduated and wish to study new fields, which they did not have time to take up during their undergraduate course. 3. Physicians who have been out of the medical school for some time and wish to get abreast of the progress that has taken place in medicine since they graduated. 4. Poorly-trained physicians who have become aware of deficiencies and wish to have them corrected.

However much we may raise the standards of our medical schools, it will affect directly only those who are yet to be trained—the future doctors. It does not offer a remedy for the recognized condition that we now have an immense number of poorly trained physicians who received their degrees from poor schools in the past. These can be reached best through the graduate schools. Hence the problem of graduate medical instruction well deserves the serious consideration of the Council on Medical Education in its efforts to raise the standards of efficiency of the profession by educational methods.

DISCUSSION

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: We have come to the time when preventive medicine must offer itself to the public. This year a bill which is practically the same in its essentials has been introduced into the legislatures of three states. As introduced into the Michigan legislature, this bill provides that in every county in Michigan with a population of 20,000 or more, exclusive of the cities of 20,000 or more, there shall be appointed a commissioner of health. In every city of 20,000 or more there shall be appointed a commissioner of health. The State Board of Health is authorized to group the less densely populated counties together, making them sanitary districts, and in every one of these sanitary districts, whether it be a city, a county or a number of counties together, the law, if it is passed, will be mandatory that there shall be appointed by Jan. 15, 1914, a commissioner of health from an eligible list furnished by the State Board of Health, and the eligibility to that list will be secured by passing a special examination on preventive medicine before the State Board of Health. He shall be a legally qualified physician. He must have passed the State Board of Examiners. In addition to this, he must have passed a special examination before the State Board of Health, and the State Board of Health will furnish every sanitary district in the state with a list of eligible men, and these men shall be appointed by a certain date in January, 1914. If this bill does not pass, it will be on account of the opposition to it by members of the medical profession. This thing is coming about whether the medical profession wants it or not.

DR. J. S. MCLESTER, Birmingham, Ala., spoke of the reorganization of the old Birmingham Medical College during the past summer. He said that its property and hospital franchise have been offered to the trustees of the University of Alabama without any obligation being imposed on the trustees by this action beyond the provision that they are to use this property and hospital equipment for such medical instruction as they may deem fit as a graduate school of medicine.

DR. J. N. MCCORMACK, Bowling Green, Ky.: I have had an idea that much of the postgraduate work, if it be made effective, must be conducted in a much broader way than can be done within the walls of colleges. For a good many years I have led a movement for a course of postgraduate instruction in every county in the United States. This work may not be done so well as in many of the medical schools of the country, but a successful effort has already been made in many counties to reach almost every physician within the county by putting the influence of the profession under him and lifting him up to the light. This movement has reached men in the country districts, the family physicians. For four years physicians have met every week, with simple laboratories, and for the demonstration of methods that were elementary in a way, but this postgraduate work has brought the ordinary physician up to a standard which a few years ago did not seem possible, and the highest function which a postgraduate school can perform is to qualify men in the counties to go out as lecturers in their respective communities and carry the blessings and

benefactions of these schools to the rank and file of the profession who are not financially able to attend graduate schools.

The Importance of Harmony and Uniformity in the Work of State Examining Boards

DR. HERBERT HARLAN, President of the Maryland State Board of Medical Examiners, Baltimore: I think I am safe in saying that few even of the officers of the state boards know well the laws of other states, and still fewer know the actual work of other boards than their own. How examination questions are prepared, what precautions are taken to maintain secrecy in reference to the questions, what precautions to prevent cheating in conducting examinations, how carefully and intelligently examination papers are read and graded, how the records in the secretary's office are kept, what detailed information can be readily and promptly furnished in regard to any man who has been an applicant, whether successful or unsuccessful before any board, or in reference to any practitioner within the bounds of the secretary's state. Let information in reference to such matters once be made public, and I predict that there will come the same marked improvement in the medical practice laws, in the personnel of examining boards and in the carrying out of these laws by these boards as will compare favorably with the improvement in the medical colleges of the country.

How can this improvement be brought about? I should say, let every effort be made to have a single association of state boards, or let all the good boards join the federation, let that body arrange for a real inspection and detailed report on all boards and their work, including the secretary's office and record, let reasonable minimum requirements be fixed and adhered to, and let membership and reciprocal relations be refused to any board not coming up to these requirements.

DISCUSSION

DR. HERBERT OLD, Norfolk, Va.: Our board was able in 1912 to have the general assembly enact a law which is a combination of the model law, as advocated by the Council on Medical Education, and some of the features suggested by the Board of Regents of New York State and the recent registration laws of Texas. The result has been that our position is now far in advance of what it was in 1911.

DR. W. S. LEATHERS, representing the Mississippi State Board of Health, University, Miss.: The State Board of Health supplements the work done by the Council on Medical Education relative to raising medical standards. If there should be a weak medical college, the purpose of the State Board of Health is to put a check on the men who are turned out by that college. The graduates of first-class medical schools should be given licenses. If boards of health are to supplement the work done by the Council on Medical Education, they ought to work in harmony with the Council. During the past year our legislature passed a medical practice act, and our board last spring passed a resolution which supports the work of the Council, namely, the board will not recognize students who come from colleges of the Class C group.

DR. B. D. HARISON, Detroit: Dr. Harlan drew attention to the fact that a man who is rejected by his board may go to another state, obtain a license, and then come back again. This can be prevented by a proper form of agreement. If the act is administered properly, no man can do that sort of thing. It is simply a question of administration. Harmony and uniformity of state licensing boards can and should be accomplished through a national association. While the boards may have their differences, or there may be a diversity of state medical laws, I think they can all agree to harmonize which will tend to uniformity.

DR. J. M. BALDY, Philadelphia, spoke at length on reciprocity between state boards. He agrees with Dr. Harison that a man who has failed in one state, goes to another and secures a license, and then returns to the state he formerly left, ought not to be eligible for reciprocity, and that if any state board were to allow that type of man to get back, it should reorganize.

The Medical Profession and Medical Education

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: A few years ago when medical education in this country was chaotic, when any man who possessed any information or ability to alleviate human suffering was welcome, and sometimes was a great public benefactor to his race, those men, many of whom had not the advantage of medical education, did their duty in a time when their services were sorely needed. That condition and the new condition surrounding the development of this country made the development of the so-called preparatory schools a possibility. Many of these schools depended on the individuality of one person. We all know in olden times when men went to Transylvania largely because of Dudley; when men went to various medical colleges on account of one individual who possessed the ability, the power, the leadership over men that made it possible for him to organize and to educate people in that day of empiricism and superstition. Who can say that those men did not do well? Any man in my judgment who loves the traditions of his country is bound to recognize that those men stood out as giants, wrought well, and made it possible by paving the way for us to have the privileges of higher education which we are receiving to-day. From the labors of these men who did this work we are public benefactors and are the teachers of the present day, and for them I have the greatest reverence.

In that etiologic period between 1880 and the nineties, when the causes of so many infectious diseases were known for the first time, it became evident that the whole trend of medical thought and medical teaching must change. We are coming to an age of prevention rather than cure; an age in which the laboratory must be brought as a strong handmaid to clinical experience. With the coming of that age, the necessity for a better-educated profession, the necessity for a more widely grounded and better-prepared and better-trained mind to study medicine became apparent. If the American Medical Association had no other use for its existence than to offer an opportunity of meeting socially, for the purpose of exchanging ideas and experiences, it might be sufficient, but when it had grown to such gigantic proportions, the master minds who had it in charge realized that they owed a much greater duty to the people among whom they lived, and that it was absolutely necessary for them to broaden the scope of usefulness, and the only way they could start the ball rolling, as it were, was to insist on a higher-class profession; hence the organization of the Council on Medical Education. When, eleven years ago, the American Medical Association organized the Council and the work was begun, it looked as if it was not only a stupendous task, but almost an impossibility to accomplish anything like practical results within our lives. I remember very well, and my colleagues will remember it, when we met for the first time and received the information that in the United States we lacked only four medical schools of having as many as the combined countries of the world. We realized what a task was before us, and yet look at the results! I want to say to you, if anything was required to show the greatness, the elasticity of power, the determination of the American character, no better illustration can be had than the response almost universally made to the demands of the national Association through its Council for better things educationally in medicine in this country. I can imagine nothing grander, nothing that will bring greater applause and add greater credit to our profession than that we shall have in a short time produced a condition in our country by which we can turn out to the world professional men with the high ideals that belong to the profession naturally, inculcating into their minds the higher elements necessary to understand all that is meant by preventive medicine, inculcating into them those principles that make each man his brother's keeper. Naturally, the future physician will not only be prepared to practice medicine in its fulness and its usefulness, but he will also be prepared to take a better view of life and become a better citizen and a better man for having been a better doctor. Then he will have reached the position the medical profession has aspired to so long, which is its natural place, at the head of the learned professions of this country.

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CONFERENCE ON MEDICAL LEGISLATION

The Ninth Annual Conference on Medical Legislation met Tuesday, February 25, at 9:30 a. m., with the Chairman, DR. HENRY B. FAVILL, Chicago, in the Chair.

The Public and the Profession

DR. HENRY B. FAVILL, Chicago: We have had a number of these conferences. Every year the question has arisen as to whether they were profitable. Every year has answered that question increasingly in the affirmative. I think that every session has justified itself more than its predecessors, and I believe for excellent and permanent results. The program this year is better than any hitherto. The ease and facility with which it has been formulated have been noticeably greater this year, and it is obvious that the men from all over the country, who are willing to come here and devote their time and thought to this matter, are doing so with a keener appreciation of attendance on the conference as a privilege rather than as a duty.

The situation is encouraging not only from the point of view of our organic activity, but also from the point of view of the public and the reception of our offerings by the public. There has been no time in the history of medicine when the utterances of the medical profession have been received with so much cordiality and with so much dignity as now. I am conscious from my relations to the Council (of which I am a member) of a phenomenal change in the attitude of the sociologic public, the press, and even the political public toward the subjects with which we deal, and I believe that this is but the beginning. Our program marks a triumph toward the things which we are striving to accomplish. Every improvement brings with it an impetus; and as we realize that the contest is not futile, but that we have entered the field of achievement, we are encouraged to redouble our efforts for the measures for the public weal. The prospect of national legislation has never been so encouraging as now. The new administration is more favorably disposed toward health legislation than has been the case heretofore, and I believe we are on the threshold of achievements. However long they may be delayed, they are steadily approaching, not on the basis of pressure, but of a receptive understanding on the part of the people who are ultimately responsible for our administrative advances. The feeling is growing for a real national department of health. On the whole, I regard the present situation with the utmost optimism.

Following the remarks of the Chairman, the Secretary, Dr. Frederick R. Green, made a brief informal statement of the work of the Secretary, after which he called the roll of the states so that the representatives could make such reports as they saw fit relative to legislative matters in their respective states.

Report of the Committee on Revision of the Model Law on Vital Statistics

DR. CRESSY L. WILBUR, Washington, D. C., Acting Chairman: The circulation of the model bill and the active interest taken in the extension of adequate registration methods by the Council have been of great service in promoting the more efficient registration of vital statistics in the United States. Experience has proved that it may be relied on to give good results, if proper provision be made for its support, and that the effectiveness of state laws now in existence may be measured by their degree of compliance with its principles. The bill has been introduced in the present sessions of the legislatures of Illinois, Iowa, North Carolina and Tennessee. While vital statistics are fundamental to public health work, their collection cannot be prosecuted successfully until the general sanitary administration of the state is provided for. A weak, half-starved state board of health will fail in the administration of any law; but once fairly equipped for work, a board can strengthen itself and promote the extension of its activities in all directions by no other means more effectively than by enforcing and utilizing the results of a good law for the registration of vital statistics.

Report of the Committee on Expert Medical Testimony

DR. HAROLD N. MOYER, Chicago, Chairman: From a consideration of all the facts, the committee feels justified in advancing the following conclusions: 1. The present system of introducing expert medical evidence is admittedly faulty. 2. Any change, if made, should be done with great caution and only after mature deliberation. 3. The present inexact state of medical science does not warrant the invasion of the province of the jury or the abridgment of cross-examination. 4. The only change at present justified is one altering the manner in which experts are to be summoned. 5. The appointment of official experts is not advisable. 6. The hypothetical question as commonly used in our courts should be simplified.

DISCUSSION

DR. E. J. MCKNIGHT, Hartford, Conn.: It would not be a bad idea for the Council to pass a resolution recommending that physicians in different localities adopt the so-called Leeds system. In Leeds, England, physicians will not testify in any case until they bring together the experts on both sides and try to come to some conclusion, as in the consultation of a private case. This simplifies matters very much, and I believe it is the solution of this trouble. We must hold consultations and get rid of the farce of expert medical testimony. If such a sentiment could go out from this Council or Conference it would be of great value.

The Chairman appointed as a Committee on Resolutions Dr. E. J. McKnight, Connecticut; Dr. James F. Percy, Illinois; Dr. S. S. Crockett, Tennessee; Dr. Ben R. McClellan, Ohio; Dr. J. W. Kerr, United States Public Health Service, and Dr. Frederick R. Green, Chicago, ex officio.

The Police Power of the State and the Practice of Medicine

MR. A. C. UMBREIT, Attorney for the Wisconsin State Board of Medical Examiners: The one great purpose of the proposed new medical practice act pending before the legislature of Wisconsin is to eliminate from the legal requirements for the practice of the healing art all sectarianism, schools or systems of practice, and base such requirements entirely on educational and professional training and fitness. This is the underlying and all-embracing purpose of the whole act. Another purpose is to give everybody who has the necessary preliminary and professional education and training an opportunity to practice the healing art in any form he chooses. If a person has the necessary educational qualifications demanded by this bill, he may practice the art and science of health in any way he sees fit; but this fundamental knowledge is absolutely required and necessary for the protection of the public. Another purpose is to place all practitioners of the healing art, as far as legal authority so to practice is concerned, on an absolutely equal basis in order that it cannot be justly charged that any favoritism is shown for any particular system or school of practice; and further to eliminate the alleged defense of persons prosecuted for violating the medical practice act that they could not obtain a license and thus legally follow their profession, even if they had the necessary qualifications, on the ground that their special school or system of practice is not recognized by the law or an examination therein permitted. Another general purpose is to give those who have no license to practice, and who may not have the necessary preliminary and professional education to pass the required examination and thus obtain a license, but nevertheless claim that they have a system of healing which possesses merit, permission to practice such system under certain well-defined limitations in order to demonstrate any merit in their contention.

Coming now to the distinctive features of the bill, the first is the fact that the words "practice of medicine," "physician," "surgeon," "osteopath" and like words do not appear in the bill at all, except in one place where it was necessary to employ these words in order to continue the legality of the licenses heretofore granted and to preserve the authority of the licensed practitioners. The practice of medicine is called "the art and science of health," a title sufficiently comprehensive to include everybody who has the ability and knowledge to treat the afflicted. There are but seven fundamental

branches of subjects in which those who desire to practice the art and science of health in Wisconsin must show sufficient knowledge in order to be recognized as licensed practitioners. These are anatomy, physiology, histology, pathology, chemistry, general diagnosis and hygiene. No one will have the hardihood to assert that persons who are not thoroughly grounded in the knowledge of the structure of the human body, of the functions of the organs and of the structure of the various tissues of the human body, of the origin and physiologic and anatomic features of disease, and its causative relations, of the science of the composition of material things and the changes they undergo in their ultimate composition, of the recognition of a disease from its symptoms and the determination of the nature of a diseased condition, and of the preservation of health and the rules and principles for the promotion of health, are fit persons to treat a human being for any ailment.

DISCUSSION

DR. M. L. HARRIS, Chicago: I am a firm believer in the police power of the state. I am a believer in higher education and higher standards for the doctor. I am a believer in the duty of the state to protect the people. I maintain that the licensing system as contained in the present medical practice acts is a failure, in that in its practical application it does not accomplish what these acts were intended for, namely, to protect the people. They do not protect the people. Nearly every medical practice act contains so many exceptions that the act itself becomes a farce. In place of protecting the public, it places a penalty on the honest educated doctor. Only one of a few illustrations need be given. For instance, take Massachusetts. Almost anybody can practice in Massachusetts anything he wants to, unrestricted, except the honest doctor. He must have all the qualifications of a high education. He must have an examination to be licensed. For what? To practice honest medicine; but any faker can practice anything he wants to without license or restriction, there are so many exceptions to the law. Other states are the same. The exceptions kill the law. In other states, where the exceptions are not specifically mentioned in the law, the decisions of the courts almost emasculate the law. That is so in a number of states.

As to the remedy, I was much pleased to see that the new Wisconsin bill includes most of the features that I recommended here two years ago, namely, that anybody should be allowed to practice medicine or any thing he wanted to without a license. What the state should do is to protect the individual in the sense of defining to him those who are qualified to practice medicine so that he cannot make a mistake. If there is a medical science, and we think that there is, we ought to be able to demonstrate it to the people, and we ought to have it so plain that any person can find a qualified practitioner if he wants to. It is the duty of the state to designate to the public in unmistakable terms those who are qualified by educational qualifications to treat the sick.

DR. EDWARD EVANS, La Crosse, Wis.: The trouble with all legislation is that it has been fundamentally wrong, that medical men and medical schools are only incidents in this whole business. The people of the community are fundamentally concerned, and until we so frame legislation as to have that in view, we shall be wrong all the time.

DR. C. A. HARPER, Madison, Wis.: I fully agree with the speakers that the medical practice act as we have it does not accomplish the purpose for which it is intended. It holds certain medical men up to certain standards, and in Wisconsin, and I believe in many other states, permits a great many people without any standards to come in and practice or work about as they please. People of that class are shrewd; they have a way of avoiding the definition of the medical practice act, and conviction in the courts is practically impossible. The bill introduced by Mr. Umbreit has a great deal of merit, and it is to be hoped it will pass the legislature.

DR. J. N. MCCORMACK, Bowling Green, Ky.: It would be unfortunate for it to go out as the sense of this body that we should undo the work which has been done in the last generation on medical legislation, and it has been based on educational reform which has been brought about. What has been done in raising the standard of medical education has been based on medical legislation of the various states, and to go back to the chaotic condition of thirty years ago would be distinctly a step backward, and it would be a false premise, I believe, on which to base opinions. Simply because the law has failed in Illinois or some other states, we should not jump to the conclusion that it has been a universal failure. We have not had a quack in the state of Kentucky for twenty or more years. It is true, they have come into our state, but we soon drove them out. We seek to secure competent men; men who are well grounded in the fundamental branches, and we believe that we are able to secure them through our system of examination, which is so impartial that we have the cordial support of the homeopaths and eclectics in my state, the same as we have it from the regular profession. I should not like to see the statement made by Dr. Harris, for whom I have the greatest respect, go out as the sentiment of this Conference as representing the opinions of the great American Medical Association. The fault is not with the underlying principles, but it is with the details of your legislation and the creation of proper public and professional sentiment which will support the legislators.

DR. C. E. CANTRELL, Greenville, Tex.: The burden is that we have to reach the people who were licensed when I was licensed. We cannot under our constitutions make the laws retroactive and impose a general examination every two or five years. If this could be done, we would solve the problem in licensing. Until we can we must bear that burden. We are not making it any worse. Let us make it better.

Progress in Vital Statistics Legislation

DR. CRESSY L. WILBUR, Washington, D. C.: The local registrar and the primary registration districts are the bases of successful registration. The local registrar should be a careful, conscientious person, aware of the importance of his duties, and prompt in fulfilling them. His district should not be so large that he cannot exercise supervision over all of it, but of such a size that the occurrence of a birth or death without proper registration may reasonably be expected to come to his attention. This will require perhaps from 1,000 to 1,500 local registrars in the average state. City and village clerks make good local registrars. Of course, health officers already conducting registration in cities may be retained. For the country, the township clerk may be employed, and in the absence of township organization, local registrars may be designated by a county board, or, preferably, as suggested by the model bill, by the state registrar. The practical objection to the latter method is the fear of building up a political machine or of creating new offices. In any event the local registrar should be liable to removal for neglect, and should receive a reasonable compensation (25 cents) for all certificates of births and deaths properly registered and promptly returned. The corps of local registrars, in addition to its usefulness in securing prompt and complete records of births and deaths, may also become an important factor in the general sanitary improvement of the state. The choice of a state registrar is important, and it goes without saying that sufficient compensation should be provided, and also the requisite degree of independence of action, to secure the services of a well-qualified man.

The model bill has never included any provision for the compensation of physicians or midwives. The committee of revision was practically unanimous in the belief that it would be undesirable and inexpedient to make such change in the bill; nevertheless a footnote was inserted calling attention to the fact that provision might be made for payment of physicians and midwives as in the Kentucky law. The registration of births has been much neglected in this country, and a much smaller proportion of the population is represented by adequate returns of births than of deaths. The enforcement of such laws is generally in the hands of physicians, and as the laws must be enforced against those physicians who neglect

or fail to comply with them, failure to proceed promptly in cases of delinquency, or entire failure to act in such cases, must be considered discreditable to the profession. We are making progress, and the condition to-day is more hopeful for complete and effective registration in the United States than ever before.

DISCUSSION

DR. GEORGE W. WEBSTER, Chicago: The most important single feature of this bill is that it provides for the immediate transmission of information from the local to the central registrar, from the local health official to the state official, where this information may be utilized. It eliminates what has been a stumbling-block in carrying on successful registration hitherto by the county official. The next strong point is that it provides for violation of the law. As an example, hitherto the Illinois law has provided that the state's attorneys in the counties shall prosecute violators of the law; but no one is charged with lodging information against these officials for violation of the law, and for the twelve or more years I have been president of the Illinois State Board of Health I have heard of only one single prosecution by the state's attorneys in any county in the state. The new model law makes provision for the state board of health to lodge information against the attorney who fails to report such a violation. It provides for uniformity and comparability of data.

The Control of Ophthalmia Neonatorum in Massachusetts

DR. MARK W. RICHARDSON, Secretary State Board of Health, Boston: In the year 1910 there were 257 cases of ophthalmia neonatorum reported; in 1911 there were 1,364 cases, and in 1912 there were 1,173. The activities of the board, especially through its prosecutions of offending practitioners, has brought the number of reported cases from 16 in 1905 up to 1,173 in 1912. The efforts of our inspectors are often of great value, as shown by some typical instances. 1. An infant was found with badly inflamed eyes. He was not receiving the proper care. Two days had elapsed between the visit of the physician and the report of the case to the local board of health. The attention of the local board of health was directed to the case, and the child was sent to the hospital where it received proper treatment. If the conditions which were found at the time of the visit had been allowed to continue there is reason to believe that the child's sight would have been destroyed. 2. A patient was found improperly treated by a private physician. The disease was progressing unfavorably, and at the advice of the state inspector of health expert treatment was obtained. The child completely recovered. 3. A case was found in which the disease originally affecting one eye had spread to the other eye, in consequence of improper care. The conditions were immediately brought to the attention of the local board of health. The child was removed to the hospital, where, under proper treatment, the sight of one eye was saved. Unfortunately, a corneal ulcer had destroyed the sight of the other eye. In another case no prophylactic had been used at the time of birth by the physician, and four days had been allowed to elapse before reporting the case to the local board of health. The child's eyes were found to be badly inflamed, with a heavy purulent discharge. The conditions were brought to the attention of the local board of health, proper treatment was instituted, and the child's eyes were saved.

In any campaign against ophthalmia neonatorum early birth returns are of the greatest importance. The legislature of 1912 helped our campaign along by requiring a preliminary birth return within forty-eight hours, and by empowering the secretary of the commonwealth to place information concerning ophthalmia neonatorum on the birth certificate. At the top of this certificate in red ink the physician or midwife is warned that inflammation of the eyes must be reported immediately to the board of health. Although midwives have no legal status, they exist in our community. Investigation shows, however, that they have played little part in the bad cases of ophthalmia neonatorum. The chief offenders seem rather to be physicians, often in good standing.

Health Organization in Schools

DR. E. B. HOAG, Minneapolis: Dr. Hoag's paper was read by title, owing to the lateness of the hour. An abstract is as follows: In my paper I outline the general procedure for a director of school hygiene at each place visited. 1. A general meeting with all the teachers of the local school system, at which are explained methods for the physical observation of school children. At these meetings practical demonstrations or clinics are held with one or more grades of school children present, usually a fourth or fifth grade. 2. Individual demonstrations to the teachers at the various grades in different schools. 3. Examination of special cases. 4. A second meeting with all the teachers for the purpose of discussion of the results of observations in the grades. 5. An open meeting devoted to the interests of parents of school children. 6. Inspection of school buildings and premises. 7. Organization of the study of mentally deficient children. 8. Recommendations for health promotion addressed to the board of education, and adapted to the conditions discovered. 9. Aid furnished in organizing school health departments according to one of the three or four standards which have been adopted. 10. Short courses in child hygiene at normal schools, and demonstrations in the training schools.

Whether local school health work should be conducted under boards of health or boards of education or with the cooperation of both depends almost entirely on local conditions, and no dogmatic answer can be given. At present, 75 per cent. of the school health work in the United States is directed and controlled by the boards of education.

DR. H. M. BRACKEN, Chairman, St. Paul, Minn., presented the report of the Committee on Railway Sanitation; Dr. S. Park Lewis, Chairman, Buffalo, New York, read a report of the Committee on Conservation of Vision; Professor E. O. Jordan, Chicago, read a paper on "The Municipal Regulation of the Milk-Supply," and Dr. W. B. Cannon, Boston, read a paper on "Antivivisection Agitation and the Forces Behind It."

DR. W. B. CANNON, Boston, offered the following resolution, which was referred to the Committee on Resolutions:

WHEREAS, Several bills introduced to regulate interstate commerce in habit-forming narcotic drugs have been introduced in Congress;

Resolved, That the Council on Health and Public Instruction and the members of the Annual Conference on Medical Legislation of the American Medical Association hereby express their approval of all legislative efforts which may be necessary to restrict the employment of habit-forming drugs to proper and legitimate uses.

The Committee on Resolutions reported that one matter only had been referred to it, namely, Dr. Cannon's resolution regarding the federal regulation of traffic in habit-forming drugs. The committee unanimously recommends the passage of the resolution.

On motion, the recommendation of the committee was concurred in.

As there was no further business to come before the conference, on motion of Dr. Crockett, the meeting adjourned *sine die*.

Medicolegal

Operation for Prevention of Procreation as Part of Penalty for Crime

(State vs. Feilen (Wash.), 126 Pac. R. 75)

The Supreme Court of Washington says that, guided by the rule that, in the matter of penalties for criminal offenses, the courts will not disturb the discretion of the legislature, save in extreme cases, it cannot hold that vasectomy is such a cruel punishment as cannot be inflicted on the defendant for the horrible and brutal crime of which he was convicted, namely statutory rape committed on the person of a female child under the age of 10 years. He was sentenced to imprisonment for life in the state penitentiary, the final judgment and sentence further ordering that "an operation be performed on said Peter

Feilen for the prevention of procreation, and the warden of the penitentiary of the state of Washington is hereby directed to have this order carried into effect at the said penitentiary by some qualified and capable surgeon by the operation known as vasectomy; said operation to be carefully and scientifically performed." That judgment is affirmed.

The defendant was prosecuted under section 2436, Rem. & Bal. Code, and the penalty of life imprisonment was properly imposed. Section 2287 provides that: "Whenever any person shall be adjudged guilty of carnal abuse of a female person under the age of ten years, or of rape, or shall be adjudged to be an habitual criminal, the court may, in addition to such punishment or confinement as may be imposed, direct an operation to be performed on such person, for the prevention of procreation." It was under the authority of this section that the trial judge ordered the operation of vasectomy, and the defendant contended that it was unconstitutional in that an operation for the prevention of procreation is a cruel punishment. As the statute does not prescribe any particular operation for the prevention of procreation, the trial judge ordered that the operation known as vasectomy be carefully and skilfully performed. The question then presented was whether the operation of vasectomy, carefully and skilfully performed, must be judicially declared a cruel punishment forbidden by the constitution. No showing was made to the effect that it would in fact subject the defendant to any marked degree of physical torture, suffering or pain. That question was doubtless considered and passed on by the legislature when it enacted the statute.

The crime of which the defendant was convicted is brutal, heinous and revolting, and one for which, if the legislature so determined, the death penalty might be inflicted without infringement of any constitutional inhibition. It is a crime for which in some jurisdictions the death penalty has been imposed. If for such a crime death would not be held a cruel punishment, then certainly any penalty less than death, devoid of physical torture, might also be inflicted.

On the theory that modern scientific investigation shows that idiocy, insanity, imbecility and criminality are congenital and hereditary, the legislatures of California, Connecticut, Indiana, Iowa, New Jersey, and perhaps other states, in the exercise of the police power, have enacted laws providing for the sterilization of idiots, insane, imbeciles and habitual criminals. In the enforcement of these statutes vasectomy seems to be a common operation.

Dr. Clark Bell, in an article on hereditary criminality and the asexualization of criminals, found at page 134, vol. 27, *Medico-Legal Journal*, quotes with approval the following language from an article contributed to *Pearson's Magazine* for November, 1909, by Warren W. Foster, senior judge of the Court of General Sessions of the Peace of the county of New York: "Vasectomy is known to the medical profession as 'an office operation,' painlessly performed in a few minutes, under an anesthetic (cocain), through a skin cut half an inch long, and entailing no wound infection, no confinement to bed. 'It is less serious than the extraction of a tooth,' to quote from Dr. William D. Belfield of Chicago, one of the pioneers in the movement for the sterilization of criminals by vasectomy, an opinion that finds ample corroboration among practitioners. . . . There appears to be a wonderful unanimity of favoring opinion as to the advisability of the sterilization of criminals and the prevention of their further propagation. THE JOURNAL of the American Medical Association recommends it, as does the Chicago Physicians' Club, the Southern District Medical Society and the Chicago Society of Social Hygiene. . . ."

Must the operation of vasectomy, thus approved by eminent scientific and legal writers, be necessarily held a cruel punishment under the constitutional restriction, when applied to one guilty of the crime of which the defendant was convicted? Cruel punishments, in contemplation of such a constitutional restriction, have been repeatedly discussed and defined, although this court has not been cited to, nor has it been able to find, any case in which the operation of vasectomy has been discussed. In State vs. Woodard, 68 Va. 66, a recent and well-considered case which may be consulted with much profit, Brannon, Justice, said: "The legislature is clothed with power well-nigh unlimited to define crimes and fix their punishment. So its enactments do not deprive of life, liberty or property without due process of law and the judgment of a man's peers, its will is absolute. . . . What is meant by the provision against cruel and unusual punishment? . . . In short, the text-writers and cases say that the clause is aimed at those ancient punishments, those horrible, inhuman, barbarous inflictions."

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Annals of Ophthalmology, St. Louis

January, XXII, No. 1, pp. 1-242

1 Results of Established Treatment of Detachment of Retina, and New Theory. D. T. Vail, Cincinnati.
2 Simple Method and Equipment for Quickly and Accurately Determining Lenses to Correct Astigmatism. D. E. Sulzer, Paris.
3 Neurotic Case of Keratitis Punctata Superficialis. W. L. Phillips, Buffalo, N. Y.
4 Syphilitic Pseudohypopyon. Rollet, Lyon, France.
5 An Accessory to Ophthalmometer Forming a Corneal Microscope. H. S. Gradle, Chicago.
6 Sociologic Aspect of Errors of Refraction. W. Zentmayer, Philadelphia.

Bulletin of American Academy of Medicine, Easton, Pa.

February, XIV, No. 1, pp. 1-112

7 Women in Industry in United States. J. H. McBride, Pasadena, Cal.
8 Relation of Foreign Population to Mortality Rates of Boston. W. H. Davis, Boston.
9 Education for Parenthood. H. C. Putnam, Providence, R. I.
10 Colorado Method for Examination and Care of Public School Children. M. E. Bates, Denver, Colo.
11 Subnormal School Child. L. T. Royster, Norfolk, Va.
12 Management, Maintenance and Efficiency of School for Cripples in Cleveland. J. E. Tuckerman, Cleveland.

Colorado Medicine, Denver

February, X, No. 2, pp. 33-70

13 Functional Tests of Heart. C. T. Burnett, Boulder.
14 Functional Tests of Liver. P. Hillkowitz, Denver.
15 Anaphylaxis. R. C. Whitman, Denver.
16 Management of Acute and Chronic Suppuration of Middle Ear. J. J. Pattee, Pueblo.
17 Case of Eclampsia. F. N. Cochems, Salida.
18 Tests of Kidney Function. C. Gillin, Boulder.

Indiana State Medical Association Journal, Ft. Wayne

February, VI, No. 2, pp. 55-98

19 *Case of Diaphragmatic Hernia. J. C. Sexton, Rushville.
20 Physical Insolvency. H. O. Pantzer, Indianapolis.
21 Some Clinics of Europe. J. O. Stillson, Indianapolis.
22 True Physician. C. A. White, Danville.
23 Relations of Specialist to Practitioner. A. Carter, Plainfield.

19. **Diaphragmatic Hernia.**—Aug. 23, 1912, Sexton's patient, male, 36 years old, had performed on him a posterior gastro-enterostomy, with anterior gastro-plication and fixation two weeks before. The conditions to be corrected by such surgical procedure were found to be a dilated stomach and duodenum, and hernia of the stomach through the diaphragm into the thoracic cavity, the esophageal opening having become dilated into a large arched abnormal passage through which the entire hand could readily be passed. At the time of operation almost the entire stomach was found within the thoracic cavity. The pull of the stomach to the left had produced considerable displacement of the peritoneum of the right upper abdomen. The layer of peritoneum covering the second portion of the duodenum was carried forward and to the left in such a manner as to present a triangular fold or layer of peritoneum abnormally thick, the division of which disclosed the dilated duodenum. During the 1910 harvest he suddenly felt something give way in his left side, or back or "clear through him," as he said—which was attended with some pain and

faintness. He had not been able to do any heavy work since that time. He had had in this last two years many attacks of vomiting, sometimes lasting a week, many attacks of so-called neuralgia of the stomach, or stomach pain—some of them sufficiently severe to require the attendance of a physician and the hypodermic injection of morphin. Later on he was educated to the use of the stomach-tube, and by the prompt application of stomach washing could always bring relief to his discomfort.

Journal-Lancet, Minneapolis

February 15, XXXIII, No. 4, pp. 97-126

24 *Diagnosis of Diseases Associated with Enlargement of Spleen. H. Z. Giffin, Rochester, Minn.
25 Oral Infection in Relation to Constitutional Infection. T. B. Hartzell, Minneapolis.
26 *Splint for Fractured Clavicle. J. T. Leland, Herman, Minn.
27 *Conservation in Some Conditions of Surgery of Intestines. G. R. Curran, Mankato, Minn.
28 *Bacteriology of Epidemic of Paratyphoid Fever. E. T. F. Richards, St. Paul.

24. **Diseases Associated with Enlargement of Spleen.**—Two cases of wandering spleen have been operated at St. Mary's Hospital. Another patient had been operated on elsewhere for movable kidney apparently as the result of a mistaken diagnosis. The kidney had been stitched up but the tumor, which, on palpation, showed all the characteristics of spleen, remained as movable as before. One patient with tuberculous enlargement of spleen was operated on in 1904 and made a good recovery, but died four months later. One patient on whom splenectomy was done for what was morphologically lymphosarcoma has remained well for seven years. In another case a diagnosis of lymphoma was made, and the patient has remained well for a year and a half. Clinically these two cases presented the syndrome of splenic anemia.

Three spleens of the Gaucher type of endothelioma have been removed at St. Mary's Hospital. The clinical histories were those of splenic anemia. In all, twenty-seven splenectomies have been done at the Mayo Clinic, from April, 1904, to July, 1912. Of these cases, eighteen conformed most nearly to the group commonly regarded from a clinical standpoint as splenic anemia.

26. **Splint for Fractured Clavicle.**—The splint devised by Leland is made of iron wire (¼ inch) after the manner of the Cabot splint, bent in half, the two extremities bent again to the border of the axilla, then downward and forward beneath the axilla with a final upward turn grasping the shoulder. The fulcrum is between the scapulas, the lever extending down the spine, padded with sheet-wadding, and bound with a flannel bandage. The axilla and seat of the fulcrum are padded while retraction is maintained by a three-inch roller bandage passing about the chest, first having made several turns about the extremity of the leverage. Retraction is most assuredly produced, and no advantage can be taken of it later by any slipping, etc. Applied under the clothing, the shoulder is exposed to inspection, and there are no adhesive plaster attachments. It is said to be as comfortable as any retentive dressing can be, consistent with results demanded. The arm is put in repose by the aid of two roller-bandages (2 inch) applied over sheet-wadding, one beginning at the wrist and applied to the elbow, while the remainder begins at the shoulder and also terminates at the elbow. The forearm bandage leaves an extremity 6 inches long at the wrist, which is split down its middle tied in a knot, then circles wrist. The two ends resulting are left to support the hand at opposite the shoulder. At the elbow this bandage passes in at the flexed elbow and is brought out and over the external border of the arm above the elbow. The arm bandage then passes back of the neck to the uninvolved shoulder, and the forearm bandage in front of the neck to the same shoulder, where they are tied in a knot, encircling that portion of the splint in the axilla when the final knot is secured. Then the arm is supported by pinning the wrist-piece to the shoulder-knot, without pulling on the neck.

27. **Surgery of Intestines.**—One conservation method to which Curran calls attention is invagination of intestines, when the vitality of the lumen, up to 6 inches, is impaired, instead of resection of the injured bowel and anastomosis. He says that if invagination is used in cases in which resection has occurred, how much more, then, should it be used when the septic lumen of the bowel does not need to be opened? It can be used in many cases, not malignant, in which the pathologic condition of the intestine will lead to necrosis, or in which the serous coat has been destroyed, which would eventually lead to many adhesions. He has used this method in over a dozen cases, both of traumatic and pathologic origin, turning in as much as 6 inches of the lumen of the intestine without any untoward result whatever. In one case of traumatic shock he felt that the patient might not have withstood a resection.

The technic is described as follows: Find the center of the part to be invaginated and then with a pair of forceps push this part into the lower segment of the intestine. Insert three stay-sutures to bring the healthy bowel above and below together, one at the mesentery at each side, the other in the center of the intestine, and then with a needle and linen thread and the Glover stitch rapidly turn in the serous coat, going deep enough to take in the muscularis mucosa or even the mucous membrane itself.

28. **Bacteriology of Epidemic of Paratyphoid Fever.**—In a series of thirty cases presenting a somewhat varied clinical picture, blood cultures performed by Richards in seven yielded in each instance a pure growth of an actively motile, gram-negative bacillus. This bacillus differed essentially in its cultural properties from *Bacillus typhosus* and *Bacillus coli*. In its growth on carbohydrates it conformed with the paratyphoid organisms. Both from its behavior in litmus milk and its reaction to certain submitted agglutination tests, the bacillus isolated in this epidemic is believed to be *Bacillus paratyphosus*. Among the individuals from whom the organism was obtained were two who assisted in the preparation and serving of food. This, together with the peculiarly limited distribution of the epidemic, is believed to justify the conclusion that the disease was due to an infected food-supply. Richards emphasizes that a positive Widal reaction does not exclude the diagnosis of paratyphoid. An accurate diagnosis of paratyphoid infection can with certainty be made only by the isolation of the paratyphoid organism from the blood.

Kentucky Medical Journal, Bowling Green

February 15, XI, No. 4, pp. 145-176

29 Treatment of Tight and Complicated Strictures of Urethra. H. C. Weber, Louisville.
30 Scleral Decompression in Treatment of Intra-Ocular Tension. J. M. Ray, Louisville.
31 Brill's Disease. L. P. Durrett, Louisville.
32 Sinus Thrombosis with Purulent Meningitis. I. Lederman, Louisville.
33 Bilateral Tuberculosis of Testicles. C. B. Spalding, Louisville.

Missouri State Medical Association Journal, St. Louis

February, IX, No. 8, pp. 253-292

34 *Quadriceps Transplantation in Paralysis. A. E. Hertzler, Kansas City.
35 Dangers of Specialties. E. H. Miller, Liberty.
36 Kidney Function Tests. F. M. Denslow, Kansas City.
37 *Possible Interrelationship of Infectious Eczematoid Dermatitis, Dermatitis Repens and Acrodermatitis Perstans. R. L. Sutton, Kansas City.
38 *New Urethrotome. H. M. Young, St. Louis.
39 Nasal Obstruction as Causative Factor in Diseases of Throat and Ear. D. C. Adcock, Warrensburg.

34. **Quadriceps Transplantation in Paralysis.**—In a case of quadriceps extensor paralysis, Hertzler transplanted the biceps and semi-membranosus into the patella. The semi-membranosus was not made to perforate the vastus internus because it was thought, on account of the atrophied condition of the muscle, the tendon would pass over it without loss of mechanical power. The result was satisfactory so far as the operation itself was concerned inasmuch as the patient had the power of extending her leg. Because of a total paralysis of the left leg a splint was necessary to stiffen it. With this aid the patient was able to stand unaided. Because of extensive involvement of the arm muscles crutches can, up to the present time, be managed with difficulty and walking unaided is not possible. It is hoped that with exercise the arms may gain additional power and enable the patient to use her crutches with better advantage.

37. **Dermatitis.**—Infectious eczematoid dermatitis is a well-defined clinical and pathologic entity, and, Sutton says, should be separated from the group of pustular eczemas in which it has heretofore been included. It is very probably due to the yellow or white staphylococcus. Histologically, infectious eczematoid dermatitis differs from dermatitis repeps (a term which also includes the so-called acrodermatitis perstans of Hallopeau) principally in the location of the inflammatory process, and the cutaneous structures involved. In the first named, the pathologic changes are confined almost wholly to that portion of the corneous layer which overlies the stratum lucidum, while in the last, the infection is more deeply seated and the prickle cell layer bears the brunt of the attack. The histologic findings readily account for the difference with which the two diseases respond to treatment. Infectious eczematoid dermatitis is quickly and favorably influenced by the simpler and milder antiparasitic applications, and, when properly treated, an attack seldom extends over a fortnight. In dermatitis repens, on the other hand, it is usually very difficult to bring about a cure, and the disease often persists for months in spite of the most vigorous treatment. Vaccine therapy properly employed, is of great value in combating both infectious eczematoid dermatitis and dermatitis repens.

38. Published in THE JOURNAL, Sept. 21, 1912, p. 937.

New York Medical Journal

February 15, XCVII, No. 7, pp. 321-372

40 Asellius and Discovery of Lymphatic Circulation. F. P. Henry, Philadelphia.
41 Friedmann's New Tuberculosis Remedy. H. J. Achard, Chicago.
42 Acute Gonococcal Urethritis in Male. V. C. Pedersen, New York.
43 Multiple Professional Cramps in a Psychasthenic. T. A. Williams, Washington, D. C.
44 Relation of Scoliosis to School Seating. J. W. Sever, Boston.
45 Routine Disinfection of Schools. J. T. A. Walker, New York.
46 Ether, Hot or Cold? C. R. Hervey, Oswego, N. Y.
47 Relation of Eustachian Tube to Chronic Catarrhal Otitis Media. H. Hays, New York.
48 Epidemic Meningitis. F. J. Slataper, Houston, Texas.
49 The Wrosted Truss. W. B. Jennings, New York.
50 Carcinoma of Lung. M. Freiman, New York.

New York State Journal of Medicine, New York

February, XIII, No. 2, pp. 61-116

51 Operative Treatment of Fractures. J. B. Walker, New York.
52 Radical Abdominal Operation for Cancer of Cervix. L. Broun, New York.
53 Plan for Betterment of Economic Condition of Medicine. E. E. Harris, New York.
54 *Dementia Praecox Without Delusions or Hallucinations, a Type Most Frequent Outside of Hospital. G. H. Kirby, New York.
55 Problem of Toxic-Infectious Psychoses. A. Hoch, New York.
56 *Hospital Treatment of Communicable Diseases. W. S. Goodale, Buffalo.
57 Small-Pox and Vaccination. F. C. Curtis, Albany.
58 *Use of Bouillon Culture of Staphylococcus Pyogenes Aureus in Diphtheria Convalescents and Bacillus Carriers. R. G. Wiener, New York.
59 Prevention of Occupational Diseases. W. G. Thompson, New York.
60 The Social Evil. J. Pedersen, New York.
61 Relation of General Practitioner to Prevention of Venereal Diseases. F. B. Brooks, Norwich.

54. **Dementia Praecox.**—Three cases are cited by Kirby as illustrating this condition. 1. Male, aged 20, in childhood was noticeably deficient in social and altruistic feelings; a seclusive personality without wholesome companionship in the family or outside of it; fairly well endowed intellectually but deficient in application and lacking in interest. In dealing with the sexual instincts of puberty he was apparently without sufficient healthy balancing interests; with excessive masturbation and absorption in sexual topics he lived more and more within himself and deteriorated into a state of grave apathy, showing also constrained behavior, mannerisms, silly smiling and diminished power of attention. No incoherence in the stream of thought. No delusions or hallucinations. 2. Male, aged 22, whose make-up was plainly of the shut-in type. Stubbornness and absence of strong emotional attachments were also prominent traits. Backwardness at school, partially accounted for by myopia. Masturbation from the age of 12. Gradual deterioration in interests, loss of energy, finally an idle apathetic state. No distortion in the stream of thought. Delusions absent; on one occasion he imagined that he heard his dead mother whisper that he should stop masturbating. 3. Male, aged 44, physician, from early youth presented many signs of a seclusive personality. He was, however, ambitious and energetic and later his professional work served to bring about considerable contact with the external world. As to his inner mental life little is known; the patient claims there is nothing to reveal. He appeared always sexually indifferent; denies masturbation. A falling off of interest and energy began at about the age of 32; the shut-in tendency became markedly accentuated; the patient gradually severed all connection with the outside world and settled into a secluded, apathetic existence without ever giving utterance to any trend of delusions. The personality remains well preserved; there is no oddity in behavior and no thought distortion. The outstanding features in this group of cases appear to be the following: The appearance in childhood of signs of a shut-in type of personality. This is probably a very deeply rooted tendency and has much to do with later developments. In fact, what we call the deterioration in these cases is, in its broadest aspect, nothing more than "a growing inward," a tendency to ignore the external world, a living apart without further interests in the affairs of life. Standing in close relation to this shut-in disposition is the difficulty in sexual adaptation, the auto-erotic traits appearing early, and masturbation becoming a fixed habit. The deterioration seems to begin in most cases at about the age of puberty when the difficulties in dealing with the sexual instinct are most acute. The decline may, however, begin much later. Kirby feels that dementia praecox of this type may be much more prevalent than we are aware of because most of the cases are likely to remain outside of the hospital. The recognition and further investigation of these cases is of practical importance, as many children who fail at school or who "break down" at about the age of puberty belong in this group; among abnormal characters and the dependent classes generally many cases of this kind of deterioration are probably to be found. In the clinical analysis of these cases we find no indication of the mechanisms usually found in dementia praecox, and therefore absence of all symptoms and trends which ordinarily come about in reaction to disturbing complexes. These cases serve to emphasize the fundamental defects in make-up and faulty mental habits as the chief factors in bringing about the deterioration. Above all there stands out the tendency to live a shut-in existence with inadequate sexual adaptation.

56. **Communicable Diseases.**—In Goodale's opinion, communicable diseases, including acute and chronic pulmonary tuberculosis should be treated in proper institutions and commitment to the same made mandatory. It necessarily follows that in order to make this procedure popular and practical, every municipality must maintain such an institution in a fitting manner. The building should be of the best, both in architecture and equipment. The grounds ample as well as beautiful and the location accessible. The interior workings of a contagious disease hospital must be made attractive to the public and the physician. In providing good food, and the best nursing and resident medical care obtainable, together with arranging proper diversions for convalescent patients, including suitably controlled visits from parents and friends, the first mentioned condition will have been complied with. The second condition, that of catering to the family physician, can only be met by putting these institutions under the control of the local department of health to be governed by a well-equipped superintendent and a sufficient number of well-paid resident physicians and other employees. The policy of the house must be "wide open" in reference to methods of treatment and the various accepted schools of medicine. In other words, every physician of the community holding a diploma entitling him to practice medicine should be accorded the privileges of the house at all times regardless of the fact whether or not his patients are pay, city or county cases. No one person in a community can do more toward popularizing an institution of this sort than a physician. Hospitals for communicable diseases

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should be considered nothing more nor less than huge quarantine stations, and if a doctor is competent to treat a patient in a home, surely he is competent to treat the same patient in a hospital. As a matter of fact this system works out in a very practical way, for at the Ernest Wende Hospital, Buffalo, where this method has always been in vogue, 98 per cent. of the physicians turn their cases over to the house and merely make occasional visits for the purpose of satisfying the family and friends on the outside.

58. **Staphylococcus Pyogenes Aureus.**—Wiener endorses the use of the staphylococcus spray and urges that it be employed more widely than it is at present.

Northwest Medicine, Seattle, Wash.

February, V, No. 2, pp. 29-58

62 Cerebral Localization from Ophthalmic Standpoint, with Report of Illustrative Cases. C. A. Veasey, Spokane, Wash.
63 Treatment of Infected Wounds at Time of Injury, Including Use of Iodin and Serums. E. VanCott, Salt Lake City, Utah.
64 Treatment of Prolapsus of Bladder. E. C. Rich, Ogden, Utah.
65 Cancer of Stomach. E. F. Root, Salt Lake City, Utah.
66 Four Cases of Lymphatic Leukemia. F. Hinman, Spokane, Wash.
67 Vienna as Clinical Center. J. E. Else, Pullman, Wash.
68 Use of Typhoid Vaccine. G. A. Gray, Spokane, Wash.

Southern Medical Journal, Nashville

February, VI, No. 2, pp. 73-146

69 Historic Rambles in Southern Fields. R. Wilson, Charleston, S. C.
70 Pathogenesis of Relapses in Malarial Fevers. A. Bignami, Rome.
71 Nitrous-Oxid Oxygen Anesthesia. E. M. Prince, Birmingham, Ala.
72 Idem. T. O. Burger and J. L. Ross, McMinnville, Tenn.
73 Epidemic Cerebrospinal Meningitis. A. E. Thayer, Mobile, Ala.
74 *Serum Treatment of Cerebrospinal Meningitis. C. C. Green, Houston, Texas.
75 Operative Versus Non-Operative Treatment of Fractures. G. J. Winthrop, Mobile, Ala.
76 Operative Treatment of Fractures. J. Graham, Durham, N. C.
77 Some Things That People Should and Should Not Forget. J. Y. Porter, Jacksonville, Fla.
78 *Sanitary Inspection: Remedial and Constructive. O. Dowling, New Orleans.
79 Open-Air Treatment of Pneumonia. J. D. Heacock, Birmingham, Ala.
80 Therapeutic Comparison, Medicinal and Otherwise as Between Caucasian and Afro-American. G. M. Niles, Atlanta, Ga.
81 Appendicitis, with Lime Water as Probable Cause. J. M. Wilson, Mobile, Ala., and W. J. Blount, Healing Springs, Ala.

74. Abstracted in THE JOURNAL, December 14, p. 2181.

78. Abstracted in THE JOURNAL, December 7, p. 2090.

Surgery, Gynecology and Obstetrics, Chicago

February, XVI, No. 2, pp. 117-232

82 *Experiences in Spinal Surgery. C. A. Elsberg, New York.
83 *Subcutaneous Rupture of Diaphragm and Positive Pressure (Meltzer). E. C. Riebel, Chicago.
84 Do Parathyroids Functionate in Intra-Uterine Life? A. Werelius, Chicago.
85 *Influence of Myomata on Blood-Supply of Uterus, with Special Reference to Abnormal Uterine Bleeding. J. A. Sampson, Albany, N. Y.
86 *Typhotuberculous Tubo-Ovarian Abscess. W. D. Fullerton, Cleveland.
87 How Can We Improve Results of Our Operations for Cancer? T. Abbe, Washington, D. C.
88 *Possible Factor in Causation of Cancer. H. Packard, Boston.
89 Meckel's Diverticulum and Complications. H. A. Brennecke, Aurora, Ill.
90 Extensive Subcutaneous Emphysema Following Intratracheal Anesthesia, with Recovery. H. C. Lake, New York.
91 *Suggestion Tending to Simplify and Make More Accurate the the Closure of Posterior Edges of Wound Margin After Excision of Saddle Ulcer of Stomach. E. M. Williams, Patterson, La.
92 Experiences with Intravenous Anesthesia. W. F. Honan and J. W. Hassler, New York.
93 Plastic Surgery-Z Incision. S. L. McCurdy, Pittsburgh.
94 Whitehead Operation for Hemorrhoids; Report of Two Hundred Cases. L. Noland, Cristobal, Canal Zone.
95 *Cure of Procidentia Uteri in Elderly Women. New Intra-Abdominal Technic. F. Fletcher, Columbus, Ohio.
96 Securing Ends of a Subcuticular Suture by Knots. F. Reder, St. Louis.
97 Obstetrical and Surgical Treatment of Puerperal Eclampsia. J. F. Moran, Washington, D. C.
98 Dilatation of Tight Urethral Strictures Causing Retention. W. S. Schley, New York.

82. **Spinal Surgery.**—Elsberg's observations were made on seventy consecutive operations for spinal disease. There were sixty primary laminectomies and ten secondary operations. Laminectomy was performed twenty-two times for tumor, nine times for section of posterior roots for pain or spasticity, four times for inflammatory bone disease, five times for old fracture of the spine, twice for syringomyelia and hydromyelia, once for intramedullary cyst, once for an arteriovenous aneurysm of the posterior spinal vessels and three times for a peculiar disease of the roots of the cauda equina. In thirteen patients not enough was found to explain the symptoms. As the improvement in most of the patients is of necessity slow and gradual, he says, years must pass before any definite statements of the end results can be made. He puts emphasis on the fact that the mortality of the operation of laminectomy should be a small one. He recently operated on the fortieth successive laminectomy for spinal disease without fatality from the operation. In experienced hands, a laminectomy is neither a particularly hazardous nor a trying operation. The surgeon who desires to have the best results in his spinal operations must have a good working knowledge of spinal physiology and pathology, he must be able to determine for himself the level and relations of a spinal lesion and should be able to recognize, as far as present knowledge will permit, its nature. Then he will be able to construct in his own mind a picture of the condition of affairs in the spinal canal and thoroughly to understand the manner in which the disease is interfering with the cord's functions. The spinal surgeon will surely be required, more and more often, to invade the tissues of the spinal cord itself, and to attack the cord on its anterior as well as on its posterior aspect. The operative procedures must be planned to meet the indications in each individual case. The incision of the skin, the separation of the fascia and muscles from the bones and the removal of the spinous processes and laminae so as to lay the spinal canal wide open, is a purely mechanical part of the operation and should be accomplished with very little expenditure of time so that the strength of the patient is little taxed before the actual manipulations around the spinal cord are begun. Osteoplastic flap operations are inadvisable and unnecessary, because they are more time-consuming and more bloody and do not give as free access to all sides of the cord. The operation of hemilaminectomy is appropriate, Elsberg thinks, for only very few cases. A wide exposure of the spinal canal is usually necessary, both for the purpose of exploration and in order that there shall be as little handling of the cord as possible. The operator should consider that every time he touches the cord he is doing harm; only then will he have the proper respect for the delicate spinal tissues. For ordinary purposes, at least two or three spines and laminae have to be removed, but Elsberg has removed as many as five to seven before the entire lesion was exposed. The support of the spinal column depends mainly on the bodies of the vertebrae, and the functions of the spine are well preserved even after seven spinous processes and laminae have been removed. The dura mater should always be tightly closed after the completion of a spinal operation (excepting in the cases to which reference will be made lafer), and the muscles, fascia and skin very carefully closed by interrupted sutures. The careful layer suture of the paravertebral muscles will contribute much to the perfect recovery of the mobility of the spinal column after a laminectomy. Oozing from the muscles should always be carefully controlled before the dura is incised. The pia-arachnoid can usually be opened separately, so that even if there is a little blood within the dural sac it will not come into direct contact with the cord; and hence those paresthesias and root pains can be prevented which sometimes follow spinal operations and are due to bleeding into the subarachnoid space. A laminectomy wound should never be drained; the careful closure of the dura, muscles, fascia and skin will be the surest preventive of cerebrospinal fluid leakage and the greatest safeguard against meningeal infection. Even when the dura is left open, leakage of cerebrospinal fluid should practically never occur if muscles, fascia and skin have been well sutured. When the laminectomy has been done in the cervical region, it is advisable to immobilize the cervical

and upper dorsal spine by means of a large posterior splint, but in the dorsal and lumbar regions, no immobilization of the spine is necessary. The patients should be kept flat on the back for the first few days, and they usually prefer that position as the most comfortable. When the laminectomy has been done in the lowermost dorsal or lumbar and sacral regions, great care should be taken that the dressings are applied so as to guard against soiling of the wound with urine or feces. This is, of course, very important, for so many of the patients who require a spinal operation in one of these regions are, from the nature of their disease, more or less incontinent of urine and feces. Soiled dressings must be replaced by clean ones at once, not only for hygienic and esthetic reasons but to avoid infection, as with *B. coli*.

83. **Subcutaneous Rupture of Diaphragm.**—Riebel's paper is summarized as follows: The diaphragm in man has an important influence on the heart's action, by its anatomic relation to the heart and pericardium. It is an important factor in the circulation by aiding venous return, especially from the abdominal cavity. It plays an important part in maintaining equilibrium in the thoracic cavity. Rupture of the diaphragm must needs be followed by serious disturbances in internal respiration and in the equilibrium within the thoracic cavity. The inevitable prolapse of abdominal organs following subcutaneous rupture still increases this condition, frequently producing a state of positive pressure in the thoracic cavity. The use of differential pressure is absolutely necessary to overcome these factors. It will insure better results, in these cases, permitting, furthermore, the choice of abdominal or transpleural route or both as the occasion requires. The character of pressure, whether positive or negative, is of little consequence, but the method of Meltzer is simple and can be used anywhere. In cases of suspected subcutaneous rupture of the diaphragm, insufflation should be employed with low pressure (10 to 15 mm.) before operation, to overcome the deleterious effects of disturbed intrathoracic equilibrium.

85. **Influence of Myomata on Blood-Supply of Uterus.**—The material for this study consisted of 150 injected uteri containing one or more of these tumors. The material for this study may be grouped according to the clinical diagnoses made before the operation, as follows: myomata, 79; pelvic inflammatory conditions, 20; uterine bleeding of obscure origin, 16; ovarian cysts, 12; carcinoma of the cervix, 8; carcinoma of the body, 5; descensus and retrodisplacements of uterus, 5; ectopic pregnancy, 3; hydatidiform mole, 1; sarcoma, 1. This shows how frequently myomata are encountered when operating for other conditions; i. e., over 47 per cent. of the material was obtained at operations which were undertaken for other conditions than myomata. Sampson's examination revealed the following: Small subserous myomata are relatively anemic and do not have any appreciable influence on the uterine circulation. Large subserous myomata are very vascular (arterial), and cause a hypertrophy of the uterine artery from which their nutrient artery arises, and thus more blood is carried to the uterus and tumor, the excess over the normal being diverted to the tumor. More venous blood is carried back to the uterine and ovarian veins. The chief arterial and venous changes are in the peripheral zone of the uterus; the radial zone and endometrium are but very little affected, and menstruation is usually not altered. Small intramural myomata are less vascular than the myometrium and apparently have very little influence on the circulation of the uterus, and usually menstruation is not altered. As cases sometimes occur with a history of menorrhagia or metrorrhagia in which small intramural myomata are found, these cases suggest that those tumors may in some way lead to uterine inefficiency, especially muscular inefficiency, with a resulting loss of control of the venous circulation of the uterus. Intramural myomata over 2.5 cm. in diameter are usually more vascular arterially than the myometrium, but less vascular venously. Some of the large tumors are so very vascular that the injected specimen appears more like an arterial angioma than a myoma. The greater the arterial supply of the tumor, the greater the increase in the arterial supply of the uterus, at least, the greater part of the increase over the normal is diverted from the uterus to the tumor. The venous plexus of the myometrium is always dilated, and this is most marked about the periphery of the tumor, and especially in places where the pressure is least. The venous uterine congestion is apparently mainly an active one, and the uterine walls are apparently hypertrophied in order to control it. The endometrium, if not encroached on by the tumor or tumors, is often hypertrophied, and its venous plexus is also dilated. Menstruation may or may not be affected, and when excessive or abnormal bleeding occurs it is apparently due to a loss of uterine efficiency; i. e., the uterus is unable to prevent the escape of an excessive amount of blood into the uterine cavity at the menstrual flow. The regenerative change following menstruation, i. e., menstrual involution, is also sometimes retarded. This may be due to changes in the endometrium, which are possibly dependent on the disturbance in circulation. Intramural myomata which encroach on the uterine cavity alter the shape of the cavity and intercept or push to one side the radial arteries which supply the endometrium over the tumor, and this, with the pressure exerted by the myoma, causes an atrophy and anemia of this portion of the endometrium. The endometrium directly opposite the tumor may also be thinner and less vascular than normal, due to the pressure of the tumor. The endometrium not directly or indirectly encroached on is always thicker and more vascular and is often actually hypertrophied and its venous plexus more dilated than normal. The condition of the endometrium in any specimen is dependent on the age of the patient and the phase of menstrual cycle when the uterus was removed. The menstrual flow arises mainly from the endometrium not directly or indirectly encroached on by the tumor; i. e., the endometrium, which has an abundant blood-supply, contains glands and is usually hypertrophied. The atrophied, anemic endometrium over the tumor which has a poor blood-supply, and in which the glands are few in number or entirely absent, takes a very small part or none at all in the menstrual flow. Disturbances in menstruation may or may not occur. The profuse flow, when it occurs, is only in a measure dependent on the increased amount of venous blood in the plexuses of the myometrium and endometrium, the larger channels uniting the two plexuses, and the hypertrophy of portions of the endometrium and the distortion of the uterine cavity making it more difficult to close. This disturbance is apparently due more to the failure of the uterus to control the venous blood under these adverse circumstances and a retardment of the regeneration or repair of the endometrium. Two specimens may appear the same, yet in one, menstruation is normal, and in the other, excessive; nor can we discern anatomically why both should not give the same menstrual history. Occasionally, dilated veins in the endometrium over the surface of the tumor may become eroded and give rise to abnormal bleeding, but the usual and chief source is from the portion of the endometrium described above. Submucous myomata represent a later stage of the intramural variety, and the veins over the surface of the tumor are more apt to become injured or undergo degeneration than those over the intramural tumors. The source of the profuse menstruation is usually the endometrium not encroached on by the myoma. Menstruation is more often abnormal, but may be normal.

Only twelve uteri were encountered containing adenomyomata, and in all twelve other types of uterine myomata were also present. These cases showed that disturbances in menstruation are not necessarily present, and when they occur they may be due to changes caused by other myomata in the specimen. On the other hand adenomyomata may cause menorrhagia or metrorrhagia, just as other intramural myomata encroaching on the uterine cavity do. When abnormal bleeding is present, it is apparently dependent on the same factors as other types of myomata, and the excessive flow does not arise from the tumor itself. Sampson's studies have led him to believe that when the bleeding arises from the tumor itself, due to sloughing or sarcomatous changes, it would be arterial (the tumors have a rich arterial supply), and not venous, as occurs from the endometrium

86. **Typho-Tuberculous Tubo-Ovarian Abscesses.**—In post-typhoid pelvic abscesses, the *B. typhosus*, according to Fullerton's studies, probably plays a more important rôle than is suspected. Puerperal infections coincident with or shortly following a typhoid infection may often have the typhoid organism as a causative agent. With these conditions, a careful inquiry into the past history for typhoid infections will probably bring out some interesting results, especially when coupled with a careful bacteriologic examination of all pus from pelvic abscesses. With a previous pelvic infection, which is more or less destructive and lowers the resistance of the parts, one would naturally more often expect to find a secondary infection. The simplest and most plausible mode of infection is by way of the blood-stream. Hexamethylenamin, which has proved so useful in preventing post-typhoid cystitis, cholecystitis, etc., though its excretion by the uterine and tubal epithelium has not yet been proved, may here be found to be of advantage, at least in the prevention of such a post-typhoid complication.

88. **Causation of Cancer.**—Packard's conclusions are based on the theory that all forms of malignant disease are possible only because of absence of or loss of immunity, and the invasion of the susceptible organism by some as yet unknown parasite. He says that it is reasonable assumption that all animal life in a normal state of environment and supplied with nutriment bearing all the organic ingredients necessary for the upbuilding and maintenance of a healthy resistant vitality, possesses in itself a protective immunity to cancer. In view of the apparently well-established fact that in the vegetable world an adequate supply of the earth-salts (phosphatic, potassic, ferric, manganic, silicic, sodic) act as a distinct deterrent on parasitic life and make for vigorous, virile, disease-resisting, healthy life, may we not assume as much for the animal world? Since a critical examination of the habits of life of civilized cancer-plagued people, in comparison with the habits of primitive cancer-free people shows that the main difference is in a dietary poor in food salts of the former and a dietary rich in food salts in the latter, the most logical and rational course is to adopt this as the keynote to cancer treatment. A well-balanced dietary must be adopted, including not only proteids, carbohydrates and fats, but also food salts.

91. **Closing Wound After Excision of Saddle Ulcer.**—In a case operated by Williams and in which a saddle ulcer 4 cm. from the pyloric ring was excised, the usual method of closure was utilized throughout, except that on the posterior surface the peritoneal apposing suture passes through all of the coats of the stomach, being passed from the inner side, which greatly simplifies the placing of this layer. Williams believes that this method of suturing is original with him.

95. **Procidentia Uteri in Elderly Women.**—Fletcher's operation is essentially an abdominal hysterectomy, the uterus being amputated at the internal os, and the stumps of the broad ligaments, together with the round ligaments, being utilized (according to the Gilliam principles of suspension) as a secure means of supporting the cervix stump and bladder close to the pubic bone. The abdominal operation is preceded by: amputation of the cervix, anterior colporrhaphy and perineorrhaphy.

Texas State Journal of Medicine, Fort Worth

February, VIII, No. 10, pp. 255-286

99 Modern Treatment of Errors of Refraction. R. W. Moore, New York.
100 Ulcer of Cornea. R. S. Killough, Amarillo.
101 Public Health is Public Wealth. J. M. O'Farrell, Richmond.
102 Importance of Head Specialists in State Eleemosynary Institutions. J. R. Nichols, Austin.
103 Some Tubal Infections, from Practitioner's Standpoint. J. A. Hill, Houston.
104 Treatment of Septic Uterus. L. A. Suggs, Fort Worth.
105 Competition in Surgery. P. H. Chilton, Comanche.

West Virginia Medical Journal, Wheeling

February, VII, No. 8, pp. 255-288

106 Etiology and Prognosis of Insanity. J. R. Bloss, Huntington.
107 Alcohol and Heredity. C. C. Wholey, Pittsburgh.
108 Ulcer of Cornea. J. L. Dickey, Wheeling.
109 Gastric Ulcer: Report of Case. W. Neill, Charles Town.
110 Non-Surgical Treatment of Lacerated Cervix. R. H. Pepper, Huntington.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

February 8, I, No. 2719, pp. 265-320

1 *Vaccines and Fever. E. C. Hort.
2 Apyrexial Typhoid. N. Flower.
3 *Simple and Rapid Method for Administration of Subcutaneous Salines. E. M. Woodman.
4 Adrenalin in Emergency Treatment of Non-Corrosive Poisoning by Mouth. J. L. Jona.
5 Late Vasomotor Paresis Due to Adrenalin. H. Whale.
6 Breaking of Vicious Circle. J. B. Hurry.
7 *Treatment of Muscular Paresis by Means of Eccentric Movements. R. Abercrombie.
8 Raynaud's Syndrome and Syphilis. H. Semon.

1. **Vaccines and Fever.**—The first statement made by Hort to serve as a basis for discussion is this: In the great majority of infective diseases accompanied by marked systemic disturbance the most prominent clinical feature is that form of intoxication which is expressed in fever. The relationship of fever to general infection is so constant that whenever continued fever occurs we may be almost certain that an infective process is at work. Continued fever is in fact an index both of the continued activity of microorganisms pathogenic to the individual infected and of the absence of effective protection against such activity. On the other hand, the absence of fever does not necessarily indicate the absence of infection. On the contrary, it is a familiar experience that in severe infections leading to a fatal issue there may be no fever on account of grave impairment of the reactive functions of the infected body. This impairment may exist prior to infection or may be the expression of extreme intoxication after infection has occurred.

While the continuance of fever is an excellent indicator of the continuance of infection and of the absence of effective immunity thereto, it is also an index that the power of reaction—whatever that may prove exactly to mean—is not yet lost. The power of reaction to infection in terms of fever is in some unknown way intimately associated with the complex problems presented by immunity. The mere presence of continued fever is a sure sign that the machinery of immunization has been set in motion and is still running. The solution therefore of the mystery that surrounds the nature and source of the substances that are the immediate cause of the fever of infective disease can hardly fail to throw light on many of those problems in immunity which are at present totally obscure. Hence determination of the essential cause of the fever of infective disease—from the pathologic standpoint as opposed to that of physiology—is a matter of immediate concern to all students of immunity. And this particularly applies to those who administer dead bacterial vaccines, whether for purposes of prophylaxis or of treatment, as well as to those who make use of bacterial emulsions in test-tube reactions.

In the pathologic problems presented by fever, inquiry must always start from the pyrogen, or substance that provokes the manifestation of fever. Hort's observations appear to show that organisms recovered from tissues other than the blood, and injected at once, possess no pyrogen, but that when grown on laboratory media they readily elaborate a contaminating pyrogen from such medium, which they subsequently adsorb. They also show that the concentration of body pyrogen cannot be high in the infected organs, since the tissue material injected in some of the cases was considerable in amount. Owing to the difficulty, however, of freeing organisms recovered in this way from tissue debris, their enumeration cannot be carried out satisfactorily. Moreover, it is conceivable that absence of pyrogen in the dead organisms after recovery from the body might be explained by exhaustion of any pyrogen they might have contained while in the body during the continuance of fever. The low concentration of pyrogen, however, already demonstrated in the blood-plasma during high fever, and the fact that injection of organisms recovered from the body at an earlier stage of an infection shows them also to be pyrogen free, make such a view improbable. In the meanwhile, in view of the cumulative

evidence here presented. Hort says it is difficult to resist the conclusion that a rising temperature is not—as we have paradoxically been led to believe—a sign of increase of bactericidal and bacteriolytic function, but is, on the contrary, an expression of the activity of living organisms. Dead organisms, in short, do not in natural infections give rise to fever.

3. **Administration of Subcutaneous Salines.**—The only requisites for Woodman's method are (1) a large silver cannula from a Southey's tube apparatus; (2) Southey's rubber tubing; (3) a small piece of glass tubing, narrow at one end to fit this tubing, and larger at the other (for this an ordinary clean fountain-pen filler does very well); (4) a large glass funnel connected to the glass tube by rubber. The various parts are joined together and the whole sterilized by boiling.

The mode of introduction differs considerably from the usual method. The anterior axillary fold is grasped firmly and drawn outward. The trocar with its cannula is then passed into the skin in a direction vertical to the chest wall and is pushed steadily through the axillary fold so that its point emerges within the axilla. The trocar is then withdrawn and the cannula is pressed onward into the axilla until its shoulder rests flush with the skin. The fluid as it emerges from this cannula spurts in all directions and is poured out into three distinct planes, separated anatomically into watertight compartments by the deep fascial layers. Into the most superficial of these fluid flows into the fatty tissue over the pectoral muscle and around the breast and extends upward over the clavicle into the neck. Beneath this saline exudes into the pectoral muscles and is limited by the deep fascia on either side. Absorption is here rapid owing to the great vascularity of the part and to the pressure maintained by the fascial limitations. Lastly, distention of the axillary space takes place and the normal concavity of the axilla is replaced by a rounded swelling. Woodman says fluid is absorbed very rapidly when introduced in this way and two pints can be run into the tissues in twenty minutes, little trace of swelling being found after an hour.

The cannula is left *in situ*, and the administration can be repeated as often as necessary. This method has one disadvantage. The introduction is rather painful, but in the majority of cases the patient is still under the influence of the anesthetic when the administration is given or is so collapsed as to be insensitive to pain. This objection is more than compensated for by the ease of introduction and rapidity of absorption of a large quantity of saline by means of a simple appliance which every practitioner has at his command.

7. **Treatment of Muscular Paresis.**—In order to perform eccentric movements, the manipulator first brings the affected muscle into its shortest position and then gradually elongates it, while the patient resists the elongation. Abercrombie claims that such movements are of more value in the treatment of paresis than the more ordinarily employed muscular movements.

Dublin Journal of Medical Science

February, III, No. 494, pp. 81-160

9 *Case of Tubal Pregnancy Attended with Serious Symptoms Without Rupture. R. D. Purefoy.
10 Interstitial Keratitis. F. A. Anderson.
11 Sanatorium Benefit in Ireland. R. J. Rowlette.

9. **Tubal Pregnancy Without Rupture.**—A healthy young woman, aged 35 years, was married in February and menstruated regularly for three months. The intermenstrual periods were then shortened by two or three days. In September, after an interval of five weeks, she experienced severe pains and passed fluid and clotted blood per vaginam for a few days. Subsequently much internal soreness was felt, especially when being driven or "jolted" in any way. About three weeks later another attack of severe pain occurred, also attended with slight bleeding and at the same time micturition became frequent and was attended with difficulty.

On making a vaginal examination at this time the uterus was found driven downward and forward against the symphysis, and Douglas' space was occupied by a soft and exquisitely tender tumor. The pulse and temperature were normal, but the patient's appearance indicated a marked degree of anemia. Absolute rest in bed was prescribed and also a mixture containing iron and chlorid of calcium with small doses of morphin. Under this treatment steady improvement and relief of all the symptoms ensued, the only remaining sign of the illness, so far as the patient knew, being a brownish discharge, which persisted for several weeks.

Early in December, 1912, the patient came under Purefoy's care. At this time the physical signs were much as already described and the state of general health was good. The brownish discharge still persisted, and a globular swelling, adherent to the surrounding structures, occupied Douglas' space. Purefoy advised an operation for the removal of the swelling and this was carried out a few days later. He found that the tube, distended with blood but still unruptured, formed the tumor in the pelvis, and when the adhesions were broken down its removal was easily effected, and was followed by an easy and satisfactory convalescence. In this instance the history and physical signs strongly suggest an extrauterine pregnancy, in the course of which rupture of the tube took place, attended with serious loss of blood. On examination of the specimen no rupture could be detected, so that Purefoy concluded that the severe pain was due to distention and stretching of the tube by blood.

Edinburgh Medical Journal

February, X, No. 2, pp. 97-192

12 Malingering. B. Bramwell.
13 Direct Laryngoscopy, Tracheobronchoscopy and Esophagoscopy. A. L. Turner and J. S. Fraser.
14 Treatment of Syphilis by Salvarsan. A. P. Mitchell.

Glasgow Medical Journal

February, LXXIX, No. 2, pp. 81-159

15 Sporadic Congenital Deafness and Deafness from Syphilis. J. K. Love.
16 Aseptic, Antiseptic and Prophylactic Measures in Ophthalmic Surgery: Observations Made in Various British and Continental Hospitals. E. Thomson.

Journal of Pathology and Bacteriology, Cambridge

January, XVII, No. 3, pp. 281-431

17 *Investigation into Cause of Rouleaux Formation by Human Red Blood-Corpuscles. H. Wiltshire.
18 *Fibrinemia. J. O. W. Barratt.
19 Human Tubercle Bacilli in Milk of Vaccinated Cow. A. S. Griffith.
20 *Transplantable Carcinoma of Kidney of White Rat. G. W. Nicholson.
21 Experimental Trypanosome Anemia. A. E. Boycott and C. Price-Jones.
22 Agglutination and Sedimentation: Their Bearing on Water Storage. M. Copland.

17. **Rouleaux Formation.**—The lack of an exact method of measuring the degree to which rouleaux formation is present makes the study of this phenomenon in disease most unsatisfactory. It is stated to be deficient in all forms of anemia, in Raynaud's disease and in sunstroke; and increased in all forms of suppuration, pneumonia and acute rheumatism, owing to increase in power of the serum. Wiltshire obtained definite results in pernicious anemia only. Six cases were examined, and, in five, rouleaux formation was found to be distinctly defective in fresh films. On examination of the serum and washed corpuscles separately, this deficiency was found to be due to some fault in the corpuscles. The sera of these cases formed rouleaux well with normal corpuscles, but each serum was practically inert with its own corpuscles. Further, the corpuscles of these cases formed very poor rouleaux with normal serum. The sixth case seemed to be exceptional, good rouleaux being formed. Poikilocytosis will not account for deficiencies on the part of the corpuscles, since it may be present to a marked degree in other types of anemia which show good rouleaux formation.

The results of Wiltshire's experiments are summarized as follows: 1. The viscosity of the fluid medium in which red corpuscles are suspended exerts a slight influence on rouleaux formation. 2. Certain colloids, such as gum, will cause formation of rouleaux of red corpuscles. 3. Serum or pathologic fluids which will form rouleaux lose this power when diluted to a slight degree. 4. Blood-serum rapidly loses its power to

form rouleaux when kept, but the rate at which this change takes place is subject to considerable variation. 5. The same may be said of the corpuscles. 6. The effect of temperature on "serum body." (a) "Serum body" is probably not injured by a temperature of 100 C. acting for fifteen minutes. (b) The power of serum appears to be increased by exposure to 60 C. for fifteen minutes. (c) The loss of power of serum when kept is delayed by heating to 60 C. for fifteen minutes. (d) Serum which has lost power completely does not regain it when heated to 60 C. for fifteen minutes. (e) "Serum body" is not injured by freezing. 7. Saturation. In this respect "serum body" does not react like hemagglutinin. 8. Pathologic exudates. (a) Inflammatory exudates have very marked rouleaux-forming power. (b) Passive exudates are weak or powerless. (c) Both retain their power when kept. (d) The marked power of inflammatory exudates is not related to activity on the part of any special type of cell. 9. Injuring cells or keeping them in contact with serum does not appear to influence the power of that serum. 10. Certain bacteria when grown in serum cause a marked power for rouleaux formation to appear. Other bacteria are inert in this respect. Iso-agglutinin is unaffected by these bacteria. 11. Red corpuscles lose their power to form rouleaux when subjected to comparatively low degrees of heat (38 C. to 45 C.). 12. The corpuscles also lose this power under the influence of carbondioxid and hydrogen, possibly owing to reduction of their hemoglobin. Conversion of oxyhemoglobin into Co-hemoglobin makes no difference. 13. Simple alterations of the acidity or alkalinity of the medium surrounding red corpuscles makes no difference in rouleaux formation. 14. The serum of cases of pernicious anemia possesses normal rouleaux-forming power. The decrease in power seen in this disease is due to some change in the corpuscles. 15. Rouleaux formation is a constant occurrence in normal shed blood.

18. **Fibrinemia.**—Barratt found that when thrombin or thrombokinase is injected intravenously into rabbits, separation of fibrin takes place in the circulating blood. The immediate cause of separation of fibrin is in all cases the action of thrombin. According to the rapidity with which thrombin is formed (a) clotting occurs in the heart and great blood-vessels, especially on the right side of the heart, following the course of fluid injected; or (b) masses of fibrin appear in the smaller blood-vessels and capillaries. The former, accompanied by the latter, takes place if separation of fibrin is very rapid; the latter alone if separation of fibrin occurs relatively slowly. The symptoms produced are in part, if not wholly, due to mechanical interference with the circulation. No evidence is forthcoming of an additional toxic effect produced by the fluid injected.

20. **Transplantable Carcinoma of Kidney.**—An old rat, with symptoms of uremia, was found to have double hydronephrosis with multiple cysts in the kidneys, and an infiltrating alveolar carcinoma in the cortex of the right organ, which had begun to disseminate locally by means of the blood-vessels. The greater part of the primary growth was used for inoculation. The rim only was transplanted, as the bulk of the tumor was quite necrotic. This analysis of the growth of the tumor on transplantation gives the following results: Tumors develop in from 20 to 100 per cent. of all the rats inoculated. Of these, however, a number undergo spontaneous absorption, so that the positive results have varied between 10 and 60 per cent. In the cases of two series there was no permanent growth.

The percentage of successful transplantations has hitherto shown no tendency to increase in later generations. On the other hand, the rate of growth has markedly increased. The majority of the permanent tumors are first noticeable under the skin during the third week, but their appearance may be greatly delayed (seven to eight weeks). The tumors which are to undergo absorption usually do not appear until a week or two later. They grow for four or five weeks and then diminish rapidly in size, having usually disappeared again by the end of a fortnight. At the end of the sixth or seventh week the grafts have a tendency to increase rapidly in size. At the same time they become softer, owing to their centers breaking down and becoming liquefied. When they have attained a great size a large area of skin over their most prominent region usually necroses. The greater part of the tumor is thus extruded, and a deep ulcer, which is lined by new growth, remains. These ulcers show little tendency to heal. In one case only has a large tumor been cured by ulcerating completely away, leaving a scar in which there has been no recurrence. Metastases in the internal organs have hitherto only once been found, even when the tumor has been allowed to run its entire clinical course.

The tumor under consideration was clearly a carcinoma, as was shown by its histology, mode of growth and dissemination along the blood-stream through the parenchyma of the kidney. The histology of the grafts is variable. In addition to large areas of an encephaloid form of growth, there are adeno-carcinomatous portions which acini show the commencement of the formation of tubules by the degeneration of their central cells. This hollowing out is of the same type as that occurring during the development of the kidney. In spite of the fact that the structure of numerous sections closely resembles that of the cortex of the suprarenal gland, this hollowing out, together with the evidence adduced from a study of the analogous tumors which have been discribed in mice and in the human subject, point to the conclusion that this tumor, together with most human "hypernephromata," has arisen in the epithelium of the renal tubules.

Journal of Tropical Medicine and Hygiene, London

February 1, XVI, No. 3, pp. 33-48

23 Rôle of Fungi in Sprue. A. Castellani and G. C. Low.
24 Case of Blackwater Fever Showing Cell Inclusions of Leishman. A. Balfour.

Lancet, London

February 8, I, No. 4667, pp. 65-132

25 *Etiology of Endemic Goiter (A Review). R. McCarrison.
26 Tumors of Kidney. R. H. J. Swan.
27 *Bone-Marrow Metastases and Anemia in Gastric Cancer. A. W. Harrington and A. M. Kennedy.
28 *Series of Seventy-Eight Cases of Streptothrix Infection. A. G. R. Foulerton.
29 Remission in Case of Epilepsy. D. W. Carmalt-Jones.
30 Case of Osteomalacia. S. Gray.
31 Congenital Absence of Both Thumbs. J. H. Sequeira.
32 Case of Acute Intestinal Obstruction Following Cesarean Section. J. B. Banister.

25. **Etiology of Endemic Goiter.**—McCarrison has treated well over 100 patients with goiters by thymol, but in eighty-two only was he able to observe the final result of the treatment. Of these eighty-two, sixty-eight were cured, or so markedly benefited as to be practically so; while fourteen were unaltered, or only benefited to a very slight degree. All were selected cases. Thirty-three were of three months' standing or less, twenty-five were of twelve months' standing or less, while twenty-four were of a year's standing or more. The great majority of these cases which could be regarded as cured or very greatly benefited were of less than one year's standing. A few were of longer duration. These were uniform parenchymatous enlargements, some of them showing marked pulsation and engorgement of the vessels of the neck.

The majority of such patients react at once to treatment by thymol, and in some the swelling disappears with great rapidity. Older patients respond less readily to treatment, but in some of these also the results are quite surprising. This treatment, like all others of a medicinal nature, is applicable only to cases of recent origin in which degenerative, cystic and adenomatous changes have not yet taken place. Where such changes have occurred no form of medicinal treatment is of the slightest use. When thymol is prescribed, in such large doses as 10 gr. twice daily, the patient's dietary should, of course, contain no solvents of the drug; otherwise most unpleasant symptoms of thymol poisoning may result. When this rule is observed, no ill effects follow its use, even when administered for such long periods as three months. Apart from a few complaints of burning pain around the anus, none of McCarrison's patients have been in the least inconvenienced by the treatment. The drug is best administered in the form of a coarse powder washed down by a draught of

water. The bowels should be active, and if there is any tendency to constipation an occasional purge should be given. A striking result of this treatment is the loss of subcutaneous fat which occurs. The patient becomes more clean-limbed and the skin assumes a healthier tint. Beta-naphthol also acts beneficially.

The chief interest which attaches to the treatment of goiter by thymol is etiologic rather than therapeutic. The germicidal power of thymol is very great. McCarrison believes that beneficial action of iodin is largely due to its powerful germicidal properties, which are even more marked than those of thymol. It acts possibly also by supplying to the thyroid that ingredient on which the antitoxic activity of its secretion depends. The internal administration of iodin also leads to leukocytosis, a very desirable object to attain where there is usually a marked reduction of the polynuclear cells of the blood. Its use is attended with a loss of weight and subcutaneous fat, and if the treatment is carried to excess dangerous wasting and palpitation of the heart and other symptoms may arise. The action exercised by the lactic acid ferments when applied to the treatment of recent cases of goiter affords additional evidence that the agent responsible for the production of goiter has its habitat in the intestinal tract of man.

In carrying out this line of treatment McCarrison has used the fresh cultures of the *Bacillus bulgaricus*. He has treated up to the present time only eight patients in this way, but the results have been very striking. His patients were under treatment for a period of one month to six weeks. To some 12 to 20 ounces of "soured milk" were given every morning and 10 ounces in the evening. The cases were all of several months' standing and during treatment there was no change whatever in the manner of life of the patients. They were treated as external cases and carried out their work in the fields as usual. The results cannot be attributed, therefore, to change of locality, habits of life, or water supply. Of these eight patients, four were cured, two improved, and two showed no appreciable difference after six weeks. In those patients who were benefitted by the treatment it was observed that the thyroid began to show evidence of diminution in size about the tenth day of treatment and that the patients lost flesh. The latter fact is of great interest, inasmuch as it is observed to occur also as a result of the treatment of goiter by means of iodin and thymol.

The next step in McCarrison's investigations was the employment, in the treatment of the disease, of vaccines prepared from bacteria found in the feces of sufferers from goiter. Three vaccines were so employed. The first, a composite vaccine made from such organisms as grew on Musgrave's agar; the second, a "coli" vaccine made from the patient's own strain of bacillus coli; the third, a vaccine prepared from a spore-bearing organism which was isolated from the feces of a goitrous pony.

The results obtained by the use of these vaccines were very remarkable, and a complete disappearance of the thyroid swelling took place in all those cases in which there were no degenerative changes in the gland. Vaccines prepared from organisms derived from sources other than the patient's own feces were then employed and equally striking results were obtained with a staphylococcus vaccine—the staphylococcus having been derived from a case of caries of bone. Considerable interest attaches to the fact that a staphylococcus vaccine exercises such a remarkable influence on the enlarged thyroid gland, since the organism is also a normal inhabitant of the intestinal tract of man.

A conspicuous feature of this treatment and one which brings it into line with the treatment by iodin, intestinal antiseptics and the *Bacillus bulgaricus*, is the fact that the patients lose flesh and the skin becomes of a healthier tint. The common factor in all these methods of cure is the fact that they destroy or inhibit the action of the toxic agent of the disease.

27. **Bone Marrow Metastases in Cancer.**—The authors emphasize that in any case of grave anemia the presence of pains and tenderness of the bones should always arouse suspicion of carcinoma of the bone marrow. If the blood on examination shows characters suggestive of pernicious anemia, but with an excess of erythroblasts and myelocytes, the diagnosis of metastases in the bone marrow is highly probable. The case cited seems to show that even in the absence of evidence of myeloid reaction, if there be any suspicion of carcinoma of the stomach, high grade anemia, with high color index and megalocytosis, taken along with the presence of bone pains, renders the diagnosis of bone metastases almost certain.

28. **Streptothrix Infection.**—Foulerton dwells at length on the difficulty of differentiating pathologically between tuberculosis and streptotricosis.

Annales de Gynécologie et d'Obstétrique, Paris

January, XL, No. 1, pp. 1-64

33 *Estimation of Operability of Cancer of Uterine Cervix by Cystoscopic Findings. P. Cruet. To be continued.

34 *Treatment of Syphilitic Pregnant Women. (Du traitement par le salvarsan des femmes syphilitiques en état de gestation.) E. Jeanselme. (Emploi du salvarsan chez les femmes enceintes syphilitiques.) C. Sauvage. To be continued.

33. **Operability of Uterine Cancer as Shown by Cystoscopic Findings.**—Cruet gives twelve colored pictures of the cystoscopic findings in several of forty-five patients with cancer of the uterine cervix, illustrating the different aspect of the interior of the bladder at the various stages of malignant disease in the adjacent organ. The article contains further a number of illustrations in the text. In many cases what seems at first the encroachment of the cancer on the bladder proves to be in reality merely congestion or sympathetic inflammation. Before declaring the cancer in the cervix inoperable, one must be very certain that the changes seen in the bladder and ureters are really the work of the malignant disease. The developing cancer may cause the bladder wall to bulge; this helps to locate the exact site of the cancer. The floor or wall of the bladder may be edematous, thrown up into folds and ridges, with vesicles, shinier and more transparent than when they are the result of ordinary bladder or ureter affections. His experience demonstrates that adhesions causing the development of ridges and depressions in the bladder and diffuse edema, may compel resection of part of the floor of the bladder and a segment of the ureter, as in a case illustrated in which these changes proved to be merely inflammatory in character. The operation on the bladder, however, opened the portal to all kinds of urinary complications. In such cases, therefore, whether the changes in the bladder are malignant or not, they should be regarded as testifying against the operability of the cancer. The operability in such cases with diffuse bullate edema depends more on operative conditions than on the histologic findings.

34. **Salvarsan During Pregnancy.**—Sauvage has supervised salvarsan treatment of twelve syphilitic pregnant women and sifts the records of others to a total of 130 cases. He comments that the action of salvarsan has been studied most thoroughly in its relation to the nervous system, but its attraction for the liver deserves special research, particularly in pregnant women in whom the liver is apt to be below par. The liver in general has an elective affinity for arsenic. Bar and Daunay found transient albuminuria after salvarsan and neosalvarsan in pregnant women, with substances in the urine which reduced Fehling's solution, and urates, all testifying to a special action of the drugs on the liver and kidneys, superposed on the action of the microbian toxins liberated under the influence of the drug. The liver and kidneys during pregnancy usually permit the elimination of the drugs without injury, the same as outside of a pregnancy, yet there is always an element of uncertainty and this is the special danger of this medication during pregnancy. Cases have been published in which the liver and kidneys seemed to be functioning normally and yet the balance was upset so easily that salvarsan caused serious injury. The variable findings with the Wassermann reaction indicate, he adds, that salvarsan has no settled influence on syphilitic infection during gestation. Even when the reaction becomes nega-

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tive under the medication it is liable to veer to positive again at any moment. The influence on the fetus is equally uncertain, the fetus may even give a stronger positive reaction than the mother.

Archives des Maladies du Cœur, etc., Paris

February, VI, No. 2, pp. 81-160

35 Origin of Leukocytolysins and Antileukocytolysins. I. I. Manoukhine.
36 Alternating Pulse in Chronic Nephritis. G. Règnier.

Journal de Médecine de Bordeaux

February 2, XLIII, No. 5, pp. 67-78

37 Fracture of the Neck of Both Femurs. H.-L. Rocher.
38 Attenuated Criminal Responsibility. C. Perrens.

Lyon Médical, Lyons

January 19, XLV, No. 3, pp. 97-144

39 The Urea Index. (La constante uréo-sécrétoire d'Ambard. Quelques applications cliniques en chirurgie urinaire.) Gayet and Boulond. See Abstr. 67, Nov. 2, 1912.

Presse Médicale, Paris

January 25, XXI, No. 8, pp. 69-80

40 *Chorea of the Heart. C. Aubertin and M. Parvu.
41 *Strychnin Dosage. (La strychnine à dose intensive. Méthode et indications.) P. Hartenberg.
42 Surgery of Vessels. (Sur l'anastomose vasculaire. Technique personnelle.) S. Porta.

January 29, No. 9, pp. 81-88

43 *Various Conditions in Which Bile Elements Are Found in Blood. (Les dissociations des états cholémiques.) A. Chauffard.

40. Chorea of the Heart.—Aubertin and Parvu report a case in which the myocardium seemed to participate in the choreic movements affecting the other striated muscles. Moity published a similar case in 1892. The arhythmia was pure and there were no murmurs, no subjective sensations and no valvular insufficiency. The patient was a child of 9 at the fifteenth day of very severe chorea. There had been no preceding acute infection except a history of measles and bronchitis; the family was free from heart disease, chorea and rheumatism. The child's choreic movements persisted during sleep; the face and even the velum participated in the extremely irregular movements, as also the diaphragm and sternocleidomastoid muscles, rendering respiration also irregular. The pulse was irregular and variable but kept about 80 and did not seem to be modified by fatigue or effort. The arhythmia of the heart on auscultation was even more striking than that of the pulse; the heart sounds were accentuated. There was no thrill nor murmur, no evidence of dilatation of the heart nor suggestion of weakness of the heart action. The child did not seem to notice anything wrong with her heart. Under arsenic great improvement in the symptoms was soon evident and all disappeared except the arhythmia which persisted six months after the muscular movements had ceased. During all this time the arhythmia maintained its original character and was never accompanied by a murmur or signs of heart weakness, and finally it subsided entirely so that conditions seemed quite normal when the child was examined eight months later. The arhythmia in this case was characterized by extrasystoles of diverse types or isolated contractions of the auricles. The electrocardiogram showed atypical waves resembling the auricular fibrillation of perpetual arhythmia. Notwithstanding the intensity of this disturbance in the heart it subsided in time without leaving a trace.

41. Strychnin in Large Doses.—Hartenberg regards strychnin as the actual specific for all nerve insufficiency. It acts as a tonic and not as a stimulant, he says, fortifying without irritating or depressing. In this it differs from alcohol, kola, coffee and tea; even in large doses strychnin does not engender motor restlessness, abnormal irritability on the part of the brain nor emotional excitement. Even when a fatal dose is taken, death occurs without loss of consciousness or psychic excitement or delirium. He has made a special study of its therapeutic dosage and has become convinced that the dosage generally in vogue is altogether inadequate. To obtain its full effect strychnin should be given in the largest dose which the individual can tolerate. This maximum varies with different persons but it is indicated by a very exact criterion, namely, the appearance of the physiologic reaction. This physiologic reaction is in reality the sign that the system is under the influence of the drug, the first manifestation of strychninism. It may take the form in one person of slight intoxication, in another of slight dizziness or rigidity of the jaws or of the limbs. Any one of these phenomena is an indication that the physiologic limit has been reached, and the aim should be to reach it. He has found strychnin sulphate the only reliable form. He insists further that the action is more reliable and thorough when the strychnin is given by subcutaneous injection. The above signs showing that the physiologic limit has been reached come on ten or fifteen minutes after the injection and last for half an hour or an hour. Sensitive persons might remain seated for the first half hour after the injection, in which case they will scarcely notice the physiologic reaction. It generally appears after a dose of 0.006 gm. in women and 0.007 gm. in men although men weighing 100 kilograms may be able to take up to 0.01 gm. before the reaction is evident. The same dose repeated after a few days no longer elicits the reaction, and the dosage has to be progressively increased in a cautious tentative manner; questioning the patient each time. The patient soon learns what to expect and is soon a competent guide to the dosage.

By proceeding in this way the patient can stand large doses, 0.01, even 0.02 gm. without his experiencing any more of a reaction than the first time, especially if he remain seated for half an hour after the hypodermic. Hartenberg adds that strychnin is rapidly eliminated—contrary to what is taught in the text-books. The elimination does not require more than three or four hours. He has proved this again and again by injecting the same dose again six hours later, finding that the physiologic reaction is no more pronounced after the second than after the first injection. He has thus given two or three injections of 0.01 or even 0.015 gm. in one day without any inconveniences. The main indications for this intensive strychnin treatment are neurasthenia, debility, cachexia, convalescence from severe disease, anemia, diabetes, cancer and all conditions of "physiologic penury," in addition to its primal indication in all affections of the spinal cord or nerves entailing hypotonicity, weakness and atrophy of the muscles without a tendency to contracture. The action of strychnin in regulating and coordinating reflex mechanism proves particularly useful in tabes, in neuritis and in all forms of amyotrophic paralysis. Of course hypertension in the arterial system, delirium and spasmodic contractures naturally contra-indicate strychnin. This intensive treatment has absolutely no inconveniences, he insists, reiterating that even in this progressive administration there is not a shadow of danger. He has thus given thousands of injections during the last ten years to patients of all classes, delicate women, children and old people, and has never witnessed even a menace of a mishap. All tolerated to perfection the dose graded to their individual sensitiveness. In conclusion he states that as strychnin does not induce any immediate excitement or pleasurable sensations there is no danger of breeding a habit, and there is no discomfort when the drug is abruptly suspended at any time.

43. Bile Constituents in the Blood.—Chauffard emphasizes the importance of discriminating in the conditions due to the presence of bile constituents in the blood between the different elements of the bile and the whole bile. The term cholemia stands for a large number of different and varying conditions with varied significance and prognosis. In studying these conditions the important part is less their common traits than their differences. Biologic chemical study of the blood is coming to overshadow in the importance of its findings the study of the urine, or at least it serves to interpret the findings of urology. Bilirubin and cholesterin may occur in the blood in physiologic conditions but this has not been proved for the biliary acids. When the blood contains all these elements, we have true cholemia with its effects visible in the skin, urine and stools, pruritus and bradycardia. In a recent case of catarrhal jaundice there were two weeks of pruritus and pulse at 36 or 40, climbing up to 80 in an hour after the atropin test, the bradycardia thus the sign of intoxication of the nerve centers by the bile salts. In congenital hemolytic jaundice there is no

cholesterin in the blood notwithstanding jaundice for over ten, fifteen or thirty years. Only 20 c.c. of blood-serum is needed for the Grigaut test; this reveals the presence of urobilin in the blood and has demonstrated that when it is found in the urine it is always to be detected in the serum. Brodin's recent research has established that the urea nitrogen and amoniacal nitrogen in the urine fluctuate with the diet but that the residual nitrogen is a relatively stable figure, from 0.05 to 0.1 gm. to the liter of serum in health. In liver disease the amount rises to 0.12, 0.2 or 0.25 gm. which throws light on the nitrogen metabolism in liver affections. Dukes "bleeding time" test reveals further pathologic conditions in the blood, a hemorrhagic tendency in liver disease. When the ear is pricked with a lancet and the blood is sucked up with blotting paper, the minute hemorrhage stops usually in three or four minutes, but in liver disease it keeps up for eight or nine minutes. In a man with tuberculous cirrhosis of the liver it kept up for twelve minutes. Another test for liver functioning is examination of the serum for hemolysins and abnormal fragility of the red corpuscles. Chauffard regards jaundice as the expression of an excess of bilirubin in the blood; the pruritus and bradycardia as the expression of the presence of the cholates in the blood (sodium glycocholate and taurocholate), a condition which he calls cholatemia; the excess of cholesterin in the blood is responsible for the yellow neoplastic growths known as xanthomas.

Revue Médicale de la Suisse Romande, Geneva

January 20, XXXIII, No. 1, pp. 1-96

44 *Ultimate Outcome of Dislocation of the Hip-Joint. (Luxation de la hanche. Résultates éloignés.) Roux.
45 Pseudodiphtheria Bacilli in Middle-Ear Disease. D'Espine.
46 *Tumor in the Heart. (Cas de tumeur du cœur.) C. Hornefler and P. Gautier.
47 Technic for Examination of Sputum. (Supériorité du procédé de Ziehl-Neelsen pour la recherche des bacilles de Koch dans l'expectoration.) G. Kaplansky.

44. **Traumatic Dislocation of the Hip-Joint.**—Roux reviews his experience during the last twenty-five years with traumatic injury of the hip-joint, seeking to estimate the ultimate outcome of such injury, especially from the standpoint of the later functional capacity in working men. When the dislocation is followed by immediate reduction, the outcome is generally excellent, as such patients are usually young and active, unless the results are compromised by a sedentary life. In his four cases of operative reduction he found the margin of the glenoid cavity turned over inward in one case; a piece chipped off the head and left in the acetabulum in another; the head under the tendon in the third, while in the fourth the parts slipped back into place as the patient was carried to bed but the dislocation recurred the next day. In roentgenoscopy of such patients it is important to examine for pre-existing lesions in the skeleton. He reports in detail twenty-two cases with reexamination years afterward and tabulates the findings for comparison. They show that in adults one must always reckon with deforming arthritis sooner or later after a traumatic dislocation of the hip-joint, even of the simplest form. The best means to prevent this seems to be by solicitous after-treatment, prolonged for a period longer than the patient is generally willing to devote to it. The misleading feature of traumatic dislocation of the hip-joint is the fact that both patient and physician are so speedily and thoroughly convinced that everything is all right once more when in reality conditions in the depths of the joint are far from being restored entirely to normal. This applies particularly to unsuspected and hidden lesions in the soft parts. They should be given ample time to heal, until all the minute anatomic relics of the injury have been fully repaired. Age is another grave factor, reducing the general elasticity of the tissues, the amount of exercise, the range of movements and the nourishment of the tissues involved. In estimating the ultimate outcome of the accident, it is wise to be guarded in the prognosis, even although others, especially the authorities on workmen's compensation, may differ with you. In all his cases with perfect functional outcome to date the interval since has been less than six years or the patient was a youth. In senile hip-joint affections, previous trauma as a contributing factor has probably been often overlooked. The more this factor is appreciated, the more often will post-traumatic deforming joint trouble be recognized in cases of alleged chronic rheumatism of a single joint which nowadays we are too apt to ascribe to toxins or microbes. Very often the whole trouble is the consequence of the surgeon's having thrown off the care of his patient too soon. In conclusion, Roux describes what he calls the spade method for reducing the dislocation; it enables a short medical man or woman to manipulate successfully the thigh even of a giant. The anesthetized patient lying on a mattress on the floor, the operator grasps the right leg with his left hand, just below the head of the tibia, and the ankle with his right hand. Then, flexing the thigh to disengage the head of the femur, the operator puts his left knee under the patient's knee and lifts the thigh in this way just as one lifts a heavy spadeful of dirt by levering it over the knee. For a left dislocation the operator will use his right hand and right knee with his left hand on the ankle. The article is well illustrated.

46. **Tumor of the Heart.**—The patient was a man of 43 who seemed otherwise normal. In this, as in three other cases at the Geneva clinic, the heart tumor was in the left auricle in all. In two the tumor was insignificant, but in the others the clinical picture was that of heart disease. It varied from the usual type in that the dyspnea was especially severe. It accompanied distressing paroxysms from momentary occlusion of the opening into the heart. Other features were the brief syncopes on abrupt change of position, rapid loss of weight and strength, duplication of the second sound, suggesting incipient mitral stenosis, arhythmia not modified by heart tonics, and the variability, inconstancy and disconcerting vagueness of the heart findings in comparison with those of other organic heart affections. The clinical diagnosis had been primary myocarditis.

Semaine Médicale, Paris

February 5, XXXIII, No. 6, pp. 61-72

48 *The Adrenal-Muscle Syndromes. A. Sézary.

48. **Adrenal-Muscle Syndromes.**—Besides Addison's disease, there are several other conditions of extreme muscular debility which recent research is connecting with insufficiency of adrenal functioning. Among them is the myasthenia of Erb-Goldiflam. This is sometimes accompanied by pigmentation, and the blood-pressure is generally subnormal, while pain in the lumbar or celiac region is frequent, and adrenal organotherapy has proved remarkably effectual in some cases. Sézary suggests that in the cases in which no benefit was derived from it the dosage may have been inadequate. He has seen cases in which subcutaneous injections of the whole extract or ingestion of fresh adrenals succeeded when the powder and epinephrin had failed completely. His experience demonstrates that certain slow changes in the adrenals, alone or with changes in other ductless glands, may induce a myasthenic syndrome which it is impossible to distinguish clinically from myasthenia independent of adrenal functioning. This justifies tentative adrenal organotherapy in all cases of myasthenia, possibly supplementing the adrenal with hypophysis treatment. Time has shown further that amyotrophy may occur from defective adrenal functioning. This is particularly liable in chronic disease, thus linking diffuse amyotrophy with wasting diseases by the intermediation of the adrenals. Laboratory research has demonstrated that epinephrin is utilized by the muscle in its contraction. Consequently the lack of normal adrenal secretion deprives the muscle more or less of the power to contract. On the other hand, an excess of the secretion is liable to entail hypertonicity in the muscle, and this may possibly be responsible for permanent contraction in some cases.

The arterial pressure is the resultant of two distinct forces, the energy of the heart impulse and the sum total of the peripheral resistances. Each of these forces is more or less under the control of adrenal secretion. By its vasoconstrictor action it exaggerates by its excess or reduces by its deficiency

the peripheral resistances. At the same time by its parallel action on muscle tissue, it reenforces or weakens the energy of the cardiac impulse. Thus with adrenal insufficiency the arterial pressure sinks and with excessive functioning the arterial pressure rises. Josué has made a special study of this last form, calling it the adrenal-vascular syndrome. Its main elements are excessive adrenal secretion, hypertrophy of the heart and arteriosclerosis. This type is a special form of the adrenal-muscle syndrome.

Berliner klinische Wochenschrift

February 3, L, No. 5, pp. 193-240

49 Functional Disease of the Arteries. Sir Lauder Brunton.
50 Blood-Pressure in Relation to Viscosity. (Einfluss des Druckes auf den Koeffizienten der Blutviscosität.) W. R. Hess.
51 Technic for Determining Carbon-Dioxid Tension in Alveoles. (Bestimmung der Kohlensäurespannung in der Alveolarluft mittelst des Interferometers.) M. Hahn and R. Heim.
52 *Infantile Scorbutus in School Children. (Das histologische Blutbild in schweren Fällen von infantilem Skorbut—Möller-Barlow'sche Krankheit—und das Auftreten dieser Krankheit im schulpflichtigen Alter.) F. Glaser.
53 Degeneration of the Cornea. (Randdegeneration der Hornhaut.) (Dystrophia epithelialis corneae—Fuchs.) R. Seefelder.
54 *Vaccine Therapy of Pruritus. (Heilung des Juckens mit autogener Vaccine.) A. Schischlo.
55 Drop Dosage. (Dosierung von Arzneimitteln in Tropfenform.) W. Beckers.

52. **Infantile Scorbutus in Boy of 6.**—Glaser reports two cases. The second patient was a boy of 6 who refused all food except boiled milk and rolls. After a year of this one-sided diet, he developed infantile scorbutus in a very severe form. The Roentgen findings are given for both cases and the rapid recovery on raw milk and lemon juice in the second case and, in the first, on raw milk, orange and meat juice, spinach and soft mashed potatoes.

54. **Vaccine Therapy of Pruritus.**—Schischlo reports the case of a robust army officer of 31, who twelve years ago had a series of itching furuncles and since then recurring large pimples on the chin with intense general pruritus, aggravated by excitement and temperature changes and rebellious to treatment of all kinds, including sulphur baths in Japan and Russia, radiotherapy and courses of various drugs—all to no effect, and he was contemplating suicide. A vaccine was then made from pus from the chin and this vaccine was injected ten times at three-day intervals. Headache and lassitude followed the first injection, but there was no reaction to the others. The opsonic index dropped after each injection, but climbed up again by the third day each time to a little higher figure, while the drop was less. By the third injection the pruritus began to abate and by the seventh had ceased completely. The vaccine therapy had been undertaken solely as a last resort to heal up the suppurating foci on the chin. The cure of the pruritus had not been anticipated, so that suggestion can be excluded from the result observed. The healing of the foci on the chin probably dried up the source of the toxins which had been maintaining through the years the itching nervous affection.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 18, XLIII, No. 3, pp. 65-96

56 Improved Technic for Resection of Stomach. (Ein epigastrischer Rippenkorbrandschnitt für Magenoperationen, insbes. die Resektion bei Karzinom.) H. Brun.
57 Treatment of Inflammation in Ovaries and Tubes. (Zur Technik der Exstirpation entzündlich erkrankter Adnexe an Hand von 100 einschlägenden Operationen.) O. Beuttner. Commenced in No. 1.

Deutsche medizinische Wochenschrift, Berlin

January 30, XXXIX, No. 5, pp. 201-248

58 *Rachitis. (Zur Pathogenese und Aetiologie der Rachitis.) M. Kassowitz.
59 Hypophysis Extract in Obstetrics. (Klinische Versuche mit den isolierten wirksamen Substanzen der Hypophysen.) S. Herzberg.
60 Transmission of Hemagglutinins in Human Milk. J. v. Zubrzycki and R. Wolfsgruber.
61 Extraperitoneal Cesarean Section. (Erfahrungen über den extraperitonealen Kaiserschnitt.) P. Baumm.
62 Influence of White Corpuscles on Viscosity of the Blood. (Ueber den Einfluss der weissen Blutkörperchen auf die Viskosität des Blutes.) I. Helmgren.
63 Quantitative Precipitation in Syphilis. (Quantitative Ausflockungsreaktionen bei Syphilis.) V. Ellermann.
64 Treatment of Cleft Palate and Harelip. (Zur Behandlung der Kieferspalten und Hasenscharten.) L. Kredel.
65 Treatment of Appendicitic Peritonitis. (Schnittlänge, Bauchspülung, Bekämpfung der Darmlähmung bei Appendicitis-Peritonitis.) Dobberlin.
66 *Syphilitic Otitis Media. (Die syphilitische Mitteiohrentzündung.) C. Lüders.

58. **Rachitis.**—Kassowitz differs from Ribbert in some minor points, but agrees with him in assuming that the deficiency of calcium in rachitic bones is not the result of abnormal calcium metabolism, but of morbid local processes at the points where bone is being produced. His own impression is that these local processes are the result of the action of some poisonous substances, but he does not think that they come from the digestive tract. Among the reasons against this is that rachitis can and often does occur in perfectly digesting and finely nourished children, that rachitis is least prevalent during the summer months, and is extremely rare in tropical countries. A number of facts seem to incriminate defective ventilation as responsible for rachitis, especially the maximum in the winter months when young children are kept in the house, the restriction of rachitis to the children of the poorer classes in cities, the statistics showing that the prevalence and severity of rachitis increase with the number of inmates of the home. Hansemann's finding of severe rachitic changes in infants born in the fall and dying in the spring, while they were conspicuously absent in infants born in the spring and living till fall. He found, further, signs of rachitis in all the monkeys examined that had been kept in captivity from early life, while he found no evidences of it in monkeys living in freedom. Heubner has also reported severe rachitis in young goats and pigs kept in the stable for months, which they speedily outgrew when turned into the field. All these data speak in favor of the assumption that the contamination of the air in the dwellings of the poor is directly responsible for rachitis, as the poisons are inhaled and taken into the blood and wreak their damage predominantly on the parts through which the circulation is most intensive. The poisons may be further transmitted through the mother to the fetus and nursing child.

66. **Syphilitic Otitis Media.**—Lüders reports five cases of a primary syphilitic process in the tympanum or labyrinth wall. Severe deafness and signs of acute otitis media were not relieved by paracentesis, and a history of syphilis, two, five and six years before, cleared up the diagnosis. All the patients stated that the hearing had gradually declined as the signs of otitis developed. One patient had also nausea and vertigo, one facial paralysis on the affected side and in one the meatus was much swollen. One patient had fever, vertigo, vomiting and nystagmus and two of the others had also nystagmus toward the sound side. One patient was an infant with inherited syphilis. Under combined anti-syphilis treatment the disturbances subsided, but the hearing on that side was permanently lost in the cases which went on to suppuration. In six other cases of non-specific acute otitis media in syphilitics the process healed promptly under the usual measures without impairment of hearing.

Medizinische Klinik, Berlin

January 26, IX, No. 4, pp. 123-160 and Supplement

67 *Asthma. (Behandlung des Asthma bronchiale.) E. Stadler.
68 *Tuberculosis Among the Well-to-Do. (Verbreitung der Tuberkulose namentlich in den wohlhabenden Klassen.) W. Kruse.
69 Emergency Tracheotomy. (Zur Geschichte der Vicq d'Azyrschen Operation.) J. Tandler. (Die dringliche Kriko- beziehungsweise Tracheotomie, mit bes. Berücksichtigung der Kropfkomplikationen.) E. Schrt.
70 Apparatus for Exercising the Back in Scoliosis. (Zur Uebungstherapie der Skoliose.) W. Becker.
71 Urinals for Bladder Fistulas and After Prostatectomy. (Kapseln für permanente Blasenfisteln und zur Nachbehandlung von Prostatektomierten.) E. Wossidlo.
72 Bacteriologic Diagnosis of Cholera. (Die bakteriologische Choleradiagnose auf Grund von Prüfungen neuerer Anreicherungs- und Differenzierungs-methoden.) W. Schürmann and S. A. Rosenblat.
73 Treatment of Paralysis. (Die physikalische Therapie peripherer und centraler Lähmungen.) K. Weiss.
74 *Diabetes. (Theorie und Behandlung des Diabetes mellitus.) W. Weiland.

67. **Asthma.**—Stadler remarks that the patient is generally seen first in the midst of an acute attack and he needs prompt and effectual help. For this we can rely on epinephrin, he says, a subcutaneous injection of 0.5 c.c. of 1 per thousand solution, in the upper arm gives remarkable relief in from three to five minutes. The by-effects, palpitation, slight chill and tremor with slight rise in the blood-pressure pass off in a few moments and the patient soon drops asleep. He has never known it to fail in his experience, and only a few instances of failure are on record. Sometimes the attack recurs a few hours later; the injection can be repeated then without fear. There is no cumulative action. In chronic cases atropin is best given by subcutaneous injection of not over 0.001 gm. Atropin is a constituent in the proprietary asthma remedies on the market. He warns to beware of narcotics. Asthma is one of the most dangerous drug-addiction breeders. The nervous system of these patients is below par to start with, and they have little will power to resist the attraction of morphin. He regards asthma as one manifestation of the exudative diathesis. The tendency to exudative processes at various parts of the body is accompanied by an abnormal nervous excitability, and this must be borne in mind in the attempt to remove the cause. Dietetic measures are very important and the asthmatic should be treated in general like a neurasthenic. He adds that asthma is one of the most prolific fields of quackery, and that against this the best weapon is, not legislation nor enlightenment of the public, but the perfecting of the art of medicine in general and in practice by every physician.

68. **Tuberculosis Among the Well-To-Do.**—Kruse states that recent statistics from Bremen show that in every 10,000 inhabitants there are thirty-six deaths from tuberculosis among the poorer classes and only five among the well-to-do. Nägeli's discovery of traces of tuberculosis in nearly every one of 1,000 cadavers examined was made on the hospital material at Zurich. Kruse has been studying the subject among the comparatively well-to-do, applying the cutaneous tuberculin test first, and if this proved negative, subcutaneous injection. Of the sixty-two adults on his staff or students at his lectures, all mostly between 20 and 25 years old, fifty-two, that is, 84 per cent., had a positive reaction. In one of the negative cases the young woman was known to have had an apical tuberculous process twenty years before. This experience teaches that the well-to-do portion of the population are affected with tuberculosis far more extensively than has hitherto been supposed. The possibility of contamination of others in the vicinity of the tuberculous deserves further study.

74. **Diabetes.**—Weiland concludes his monograph by emphasizing that diabetics require supervision for years. One is frequently surprised at the aggravation of conditions when the patient has been left to himself for a long time. The diabetic is inclined to deceive himself in neglecting the strict dietetic regulations. His dislike of the restrictions imposed is one reason why diabetics are so liable to flock to quacks, as they claim to cure diabetes without dieting. In regard to life insurance, he advises great caution, erring, if at all, on the side of rejecting the diabetic candidate. He discusses further the importance of trauma in the causation of diabetes, stating that his own experience and the statements of the patients have banished all doubt as to the possible causal importance of trauma. A latent diabetes may be fanned into a flame by the accident, or diabetes may develop in a predisposed individual or the accident may aggravate the existing diabetes. When the interval is longer than from six to twelve months, he thinks a causal importance must be denied the trauma. He advises against marriage for diabetics on account of the hereditary nature of the affection, and adults with an inherited taint, although not themselves diabetics, should be warned of the dangers to posterity and the mishaps liable during pregnancy and the puerperium. The progressive course of diabetes during pregnancy and the tendency to coma after delivery, the high mortality and malformations of the fetus of diabetic mothers are so numerous that the advisability of early artificial delivery should be considered. At the same time, Bingel has lately reported a successful pregnancy in a diabetic. Weiland's experience warns further against attempting an operation on a diabetic. In his cases of gangrene the process continued unmodified in spite of all medical measures.

Münchener medizinische Wochenschrift

January 28, LX, No. 4, pp. 169-224

75 *Peptic Ulcer of Spastic Origin. (Das spasmogene Ulcus pepticum.) G. v. Bergmann.
76 Blood-Pressure After Exercise as Guide for Estimation of Labor Capacity. (Ueber Blutdruckmessung nach Körperarbeit und ihre Bedeutung für die Beurteilung der Arbeitsfähigkeit.) H. Stursberg and H. Schmidt.
77 *Rational Surgery of the Nerves. (Beiträge zu einer rationellen Nervenchirurgie.) A. Stoffel.
78 Moving Pictures of Pathologic Stomach Movements. (Bewegungsvorgänge am pathologischen Magen auf Grund röntgenkinematographischer Untersuchungen.) C. Bruegel.
79 Blood Findings in Acute Sulphuric Acid and Copper Sulphate Poisoning. V. Reichmann.
80 *Cure of Pregnancy Toxicosis with Injection of Ringer's Solution. (Schwangerschafts-Toxikodermien durch Ringersche Lösung geheilt.) E. Eichmann.
81 Improved Technic for Inoculation Tests. (Zur Frage des Tuberkulosenachweises durch beschleunigten Tierversuch.) P. Esch.
82 Lipoid Content of So-Called Appendix Carcinomas. R. Maresch.
83 Tuberculin and Immunity to Tuberculosis. Deycke and Much. Commenced in No. 3.

75. **Spastic Origin of Peptic Ulcer.**—THE JOURNAL has reviewed from time to time recent research on the antagonism between the sympathetic and the vagus nerves in respect to their response to atropin and pilocarpin. It has been found possible to reproduce artificially with drugs the clinical symptoms of abnormal excitability of the vagus and also to inhibit with atropin both the natural and the induced symptoms. Eppinger and Hess—who coined the term "vagotony" for this condition of abnormal excitability on the part of the vagus—noticed the frequent coincidence of this condition with gastric ulcer, and that the pain with a gastric ulcer is peculiarly intense in the "vagotonikers." They theorized to explain this, but Bergmann thinks their deductions are wrong, and offers a more plausible explanation, namely, that extra excitability on the part of the vagus leads to occasional spastic contraction of the organs innervated by it. The vessels in the contracted portion are, of course, squeezed tight, expelling the blood, and the region thus rendered ischemic and thus shut off from its nourishment loses its protection against the corroding action of the gastric juice. An erosion or an ulcer is liable to develop and to be maintained by repetition of the contracture. In his sixty cases of gastric ulcer, signs of abnormal excitability of the vegetative nervous system were unmistakable in fifty-eight of the patients. In a number, roentgenoscopy showed spasm of the stomach, the transient hour-glass shape.

The practical conclusion which he draws is, therefore, that treatment of gastric ulcer must include measures to reduce the vagotony, namely, a course of atropin. He even insists that therapeutics has no more striking effect on its record than the subsidence of gastric ulcer disturbances under atropin. It relieves the reflex spasm of the pylorus, and the quieting down of the stomach can be watched in the *x*-ray picture. He has had patients continue to suffer under morphin, but they were relieved the first day 0.0005 gm. atropin or twice this was given in a pill three times a day. The action is prompter by the subcutaneous route. He declares that morphin has a directly injurious action with gastric ulcer, increasing secretion and the tendency to spasmodic contraction, thus causing the food to be retained longer in the stomach, while atropin, to supplement the ordinary treatment of gastric ulcer, is the best of all measures. The atropin must be dosed according to the irritability of the vagus and it must be kept up a long time. The daily dose ranges between 0.001 and 0.004 gm. The aim should be to reduce both the secretory and motor functioning of the stomach to the maximum. An alkali and the use of well cooked vegetables may prove valuable adjuvants. Westphal obtained hemorrhagic erosions in the stomach and duodenum of rabbits treated with drugs (pilocarpin and physostigmin) to irritate the vagus. In one case a true peptic ulcer developed and perforated.

77. **Surgery of the Nerves.**—Stoffel reiterates that both nerves and muscles are made up of minute fibers which blend more and more to form larger and larger bodies, trunk nerves and big muscles, but the minute units can be followed and traced far upward. Transplantation of a nerve is irrational unless these fiber units are regarded and utilized. The special units for the special muscle must be sorted out and the graft sutured to them alone. He gives an illustrated description of the special technic he has found best suited for the purpose, and urges further research on the morphology, physiology and biology of the peripheral nerves, his work having shown numerous gaps in the text-books on this subject.

80. **Pregnancy Toxicosis Cured by Kinger's Solution.**—Three cases are reported in which the subjective disturbances, the pruritus, were arrested at once and the objective gradually subsided after an injection of 180 c.c. of Ringer's solution, repeated two days later, in the first case. In the second a single injection of 150 c.c. answered the purpose. In the third 160 c.c. were injected and 190 four days later.

Ringer's solution is a mixture of sodium chlorid 1.8 gm.; calcium chlorid 0.048 gm.; potassium chlorid 0.084 gm.; sodium bicarbonate 0.06 gm. and distilled water to 200 c.c.

Wiener klinische Wochenschrift, Vienna

January 30, XXVI, No. 5, pp. 161-200

84 *Protruding Floor of the Acetabulum. (Zur Aetiologie und Genese der Ottoschen Protrusion des Pfannenbodens.) C. Breus.

85 *Roentgenoscopy During Irrigation of the Colon. (Ueber direkte Irrigo-Radioskopie des Kolons.) G. Schwarz.

86 Dental Caries a Streptomycosis. E. Baumgartner.

87 Injury of Eye in Testing Electric Lamps. (Neue Gefahrenquelle für gewerbliche Augenverletzungen.) H. Pach.

88 Flushing the Large Intestine in Treatment of Stenosis. (Zur inneren Behandlung von Dickdarmstenosen.) A. Brosch.

84. **Irregularity in the Floor of the Acetabulum.**—Breus states that there are now thirteen cases on record of what he calls Otto's protrusion of the acetabulum floor. Nine of the patients were women and in six the trouble was bilateral. He declares that there is no evidence to date that tabes can be incriminated; the joint lesions of tabes assume a different type. It may occur in a tabetic, but merely as a coincidence, or tabetic changes may be superposed on the pure Otto type which is merely the result of defective repair of some old local inflammatory process.

85. **Irrigoradioscopy of the Colon.**—Schwarz illustrates the findings in five cases in which injection of a suspension of bismuth under direct roentgenoscopy instructively revealed stenosis high up in the colon.

Zentralblatt für Chirurgie, Leipsic

February 4, XL, No. 5, pp. 153-192

89 Fascia Graft for Ptosis of Eyelid. (Zur Ptosisoperation mit freier Fascientransplantation.) Aizner.

90 Total Laceration of the Urethra. (Zur Behandlung der totalen Harnröhrenzerreissungen.) A. Hofmann.

91 Circular Knife for the Prostate. (Ein Prostataringmesser für die suprapubische Prostatektomie.) E. Grunert.

92 *Rubber Gloves. (Bolus alba im Handschuh.) R. Burmeister.

92. **Rubber Gloves.**—Burmeister remarks that surgeons would not lose their temper over rubber gloves quite so often if they followed his practice of lubricating them with bolus alba. Just before putting on the gloves, he takes two tablespoonfuls of bolus alba in his palm and rubs it with a little water over both hands, so that they are covered with a thick paste. The gloves then slip on and off more readily, while they cling to the hand better and the paste has a soothing action on the skin and seems to protect the gloves against tearing.

Zentralblatt für Gynäkologie, Leipsic

February 4, XXXVII, No. 5, pp. 153-192

93 Roentgen versus Radium Therapy in Gynecology. (Die Strahlentherapie in der Gynäkologie: Röntgen- oder Radiumtherapie.) B. Krönig and Gauss.

94 Hypophysis Extract in Obstetrics. (Bedeutung der Hypophysenpräparate für die Hebosteotomie.) G. Linzenmeier. (Hypophysenextrakt und Spätgeburt.) L. Stolper. (Hat das Pituitrin einen nachteiligen Einfluss auf das Kind?) F. Spaeth.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 23, XXXIV, No. 10, pp. 97-104

95 Rarity of Genu Valgum Among Arabs. (Sulla rarita del ginocchio valgostatico presso gli arabi.) M. Tortora.

January 26, No. 11, pp. 105-120

96 *Leukemia and Pseudoleukemia. A. Ceconi.

January 28, No. 12, pp. 121-128

97 *Facial Paralysis. (Osservazioni cliniche sulle paralisi facciali.) P. Finizia.

January 30, No. 13, pp. 129-136

98 Successful Opening of the Chest on Both Sides for Bilateral Empyema in the Pleura. (Caso di empiema pleurico bilaterale guarito con doppia toracotomia.) L. Bozzotti.

96. **Leukemia and Pseudoleukemia.**—Ceconi describes a case of pseudoleukemia in a man of 60 which became transformed in the course of two years into typical lymphatic leukemia, sustaining the assumption of the identity of the two. Leube's leukanemia, on the other hand, is merely a symptom, but as such it may be the only sign for a time of true leukemia, as also of cancer of the bone-marrow and of severe infections and intoxications of many kinds.

97. **Facial Paralysis.**—In the case reported the seventh nerve was totally paralyzed, bilateral and crossed. This excluded the facial nerve as the source of the paralysis; at least it could not be a peripheral paralysis, and Finizia presents arguments to sustain the assumption that the seat of the lesion was in the cortex of the right hemisphere of the brain. The patient had a mitral defect, and the lesion causing the paralysis was probably some minute focus of softening from embolism.

Policlinico, Rome

January 12, XX, No. 2, pp. 51-76

99 *Occlusion of Large Vessel with Strip of Tendon Fiber. (Produzione di stenosi dei grossi vasi mediante bandellette fibreo-apotecnotiche o tendinee.) F. Nassetti.

100 Syphilitic Meningitis Plus Hysteric Amaurosis. M. Zalla.

January 19, No. 3, pp. 77-112

101 *Strychnin in Retention of Urine in Paralytics. (La strichnina nella ritenzione urinaria dei paralitici.) A. Taddei.

January 26, No. 4, pp. 113-148

102 *Wounds Produced by Modern Projectiles. (Ferite prodotte dalle moderne armi da fuoco portatili da guerra alle varie distanze.) P. Imbriaco.

103 *Reflex Phenomena from Helminths. (Emidrosi destra e spasmi ritmici del piede dello stesso lato di origine riflessa per elmintiasi intestinale.) M. Condorelli.

January, Medical Section, No. 1, pp. 1-48

104 *Hemolytic Jaundice in the Tuberculous. (L'ittero emolitico della tubercolosi.) G. Jona.

99. **Occlusion of Large Vessels by Means of Strips of Fascia or Tendon Tissue.**—Nassetti has been experimenting with ligation of large vessels on animals and has found that strips of tough tissue answer the purpose admirably, much better than the metal bands which Halsted has been using (1912). The vessels thus ligated were the carotid, aorta and vena cava, in dogs, and the strip of tissue was taken from the fascia lata or Achilles tendon. He passed the strip around the vessel once or twice, watching the pulse beyond, and fastening the ends of the strip with a silk suture. The artery could thus be reduced to one-half or one-third its former lumen without apparent injury and without signs of thrombosis. There was no paresis or paralysis in nine of the ten dogs of his latest series of experiments. Four died from infection or perforation at the point where a stitch had been taken in the aorta, and one from the effects of complete obstruction of the aorta owing to the sticking together of its walls. This method of occlusion by means of a strip from the individual's own fascia lata seems destined to an important place in the treatment of aneurysm, Nassetti thinks. The wall of the aneurysm might be reenforced with a considerable flap from the fascia lata. He urges research in this line when aneurysm can be experimentally produced. The fascia strip method might also prove useful when it is desired to shut off the circulation from a region and the fear of an infarct deters one from applying a ligature direct. For example, the spread of a disease process in the lung might be arrested by inducing by this means a tendency to sclerosis which follows when the blood-supply to a region is impeded.

101. **Strychnin in Retention of Urine in Paralysis.**—Taddei refers to the retention accompanying advanced stages of progressive paralysis, and states that while strychnin by the mouth is unreliable, by subcutaneous injection it has a remarkable action in overcoming the paralysis of the bladder. He gave from four to twelve injections, each 0.02 c.c. of a 1 per thousand solution, commencing at the first sign of a tendency to retention of urine and suspending the drug as the tendency subsided, returning to it again on renewal of symptoms. He commenced this treatment in 1904 at the insane asylum in his charge, and summarizes here thirty-two cases in which the rapid and certain success of the injections was amply demonstrated. He adds that the strychnin seemed to have a supplementary beneficial action in warding off or hastening the healing of decubitus.

102. **Wounds Produced by Modern Firearms.**—This communication from the seat of war gives illustrations and comments on the character of the lesions made by modern firearms—much the same conclusions as were given recently in the Rome Letter, February 15, p. 534.

103. **Reflex Nervous Phenomena From Presence of Tapeworm.**—In the case reported there was a transient attack of pulsating pain in the temples and tonic contraction of the prevertebral muscles as the first sign of trouble in the man of 47. Three weeks later a second attack occurred, accompanied by profuse sweating on the right side alone, most profuse on the chest, and transient violent contracture of the foot, followed by a rapid rhythmic movement of the tip of the foot to and fro, similar to the motion of the foot in running a sewing machine. The pains, sweating and rhythmic spasm of the foot all lasted about two hours during which the mind was slightly confused. After a few days of repose on account of considerable prostration, the man returned to work but still complained of occasional slight dizziness. Seventy days afterward the spasmodic attack returned, identical in every respect with the first one, but lasting an hour. The pain in the temples came on suddenly each time and was extremely severe, and the face felt hot. The foot symptoms suggested the rhythmic chorea of hysterics but the entire absence of other signs of hysteria led by exclusion to the diagnosis of helminthiasis, and male fern caused the expulsion of a tapeworm, after which there were no further disturbances.

104. **Hemolytic Jaundice in the Tuberculous.**—Jona reports two cases supplementing three he has previously described and three published by French writers, in which without any signs of bile in the blood the patients presented the aspect of jaundice—the result of enormous destruction of red corpuscles. In two cases the blood-vessels seemed to be abnormally fragile but no autolysins or isolysins were discovered in the blood of the three patients whose clinical course was supervised. In Jona's five cases the inclusion of numerous red corpuscles in the large cells of the spleen and in the Kupfer cells in the liver was a striking feature of the necropsy findings. Hemolytic jaundice may occur in the tuberculous as a chronic or intermittent condition or merely as a terminal phenomenon.

Brazil-Medico, Rio de Janeiro

January 1, XXVII, No. 1, pp. 1-10

105 *Progressive Degeneration of the Lenticular Nucleus: Two Cases. (Da degeneração lenticular progressiva ou syndrome de—Wilson—Kinnier.) R. Vaz.

106 Prostatitis. B. P. Leme.

105. **Progressive Degeneration of the Lenticular Nucleus.**—Vaz gives an illustrated description of the clinical course in two cases of typical and severe Wilson's disease. The clinical manifestations were exclusively motor; the cirrhosis of the liver found at necropsy was silent in regard to symptoms except for a slight tendency to jaundice and mild dyspepsia in one case. Cirrhosis of the liver is an integral part of the syndrome to which Wilson called attention as the result of progressive degeneration of the lenticular nucleus. In the acute form there is fever and the movements are not quite like those of the chronic form. In his twelve cases the disease lasted four, six and fourteen months in the group of three acute cases; the cachexia was rapid and everything pointed to a severe toxi-infection. In the chronic form—to which the two cases reported by Vaz belong—the disturbances are almost exclusively motor and the course is protracted. Every muscle in the body except the external ocular seemed to participate in the spasmodic contracture in his first case, but the contractions passed over the body in a regular sequence, commencing in the brow and ending in the ankles and toes. Every change of position is followed by the spastic contractures, and when the patient is seated the trunk sways to and fro. The patients were men of 21 and 25. The affection commenced in the first case six years before the fatal termination. The young man had been previously healthy except for measles, malaria and small-pox. The first signs of trouble were a sensation of weight in the legs, most pronounced on the left side, rendering it difficult and very fatiguing to walk. Sudden contracture of the muscles of the legs occurred occasionally, so that he would fall, but there were no sensory disturbances and the genito-urinary sphere was intact. The contractures in the legs were predominantly in extension and abduction at first, but gradually included flexion and intense tremor. In bed the patient lay on his stomach mostly to avoid bringing on the contractures. There was no microscopic examination of the brain.

Semana Medica, Buenos Aires

December 26, XIX, No. 52, pp. 1341-1400

107 *Local Application of Salicylic Acid to the Chest in Treatment of Pneumonia. (Nuevo tratamiento de la neumonia.) P. B. Aquino.

108 Protoplasm of the Cell. (Organizacion de la celdilla. El protoplasma celular y las substancias albuminoides.) V. Delfino.

109 Eye Symptoms from Disease of the Nose and Accessory Sinuses. (Sintomas oculares producidos por las afecciones de la nariz y de los senos vecinos.) V. Gomez.

110 Tuberculosis in the Navy. (La tuberculosis en la marina de guerra.) A. Fernandez-Caro.

January 2, XX, No. 1, pp. 1-60

111 Serotherapy in Prophylaxis of Tetanus. L. Bard.

112 Argon. V. Delfino.

113 Distribution of Colors in Animal Kingdom. (La coloracion de los animales y la distribucion de los colores en el reino animal.) V. Delfino.

114 Artificial Creation of Life. V. Delfino.

107. **Local Application of the Salicylates in Pneumonia.**—Aquino extols the efficacy of local application to the chest of a mixture of 10 gm. of salicylic acid in 90 per cent. alcohol with 10 gm. of castor oil. The skin is first washed with ether and then one or two spoonfuls of the solution are applied on a square of gauze and the whole covered with cotton and rubber tissue, held in place with a bandage. This dressing is renewed three or four times during the twenty-four hours. Methyl salicylate might prove equally effectual but its penetrating odor is too great a drawback. The salicylic acid is refound in the urine and one of his patients complained of ear disturbances, confirming the thorough absorption of the drug. By this mode of administration the injurious influence on the digestive tract is avoided. He supplements it always with heart tonics, enemas, and an alkali internally to prevent irritation of the kidneys as the drug is eliminated through them. In the three cases reported in detail he applied only the salicylate locally, to test its efficiency alone. The symptoms were alleviated almost at once, and the patients felt so well that he could confidently predict defervescence the next day, which never failed him by the third day. He prefers for the heart tonic an injection of 0.01 or 0.02 gm. of camphorated oil each day to sustain the myocardium.

Medicina Contemporanea, Lisbon

January 26, XXXI, No. 4, pp. 25-32

115 Dental Hygiene in the School. (Hygiene bucco-dentaria nas escolas.) S. Falcão and Q. Graça.

Revista de Medicina y Cirugia, Havana

February 10, XVII, No. 3, pp. 53-80

116 Successful Serotherapy in Another Case of Tetanus; Incubation Fifteen Days. (Un caso mas de tetanos traumatico curado por la seroterapia intensiva.) L. Huguet.

117 Ocular Disturbances with Brain Tumors. S. E. Stincer and Gonzalez.